

KIC 009346592

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
009346592-01	OBS	No	504.746735	138.109841	1012.8	4.708	15.4	6.5	0.65	4234	2.03	0.11
009346592-02	OBS	No	504.919794	483.729108	807.2	9.458	15.5	4.7	0.65	4234	2.10	0.11
009346592-03	OBS	No	270.092408	193.258862	925.8	2.243	14.3	7.8	0.65	4234	2.37	0.24
009346592-04	OBS	No	399.981133	377.728840	639.9	3.920	13.7	5.3	0.65	4234	1.87	0.14
009346592-05	OBS	No	337.335446	250.824416	705.3	3.057	13.7	6.4	0.65	4234	1.90	0.18
009346592-06	OBS	No	391.787932	276.655756	742.4	9.022	12.7	4.8	0.65	4234	1.78	0.15
009346592-07	OBS	No	698.882333	172.118387	1119.5	7.401	13.9	7.3	0.65	4234	2.25	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009346592-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009346592-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS
009346592-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
009346592-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009346592-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009346592-06	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009346592-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

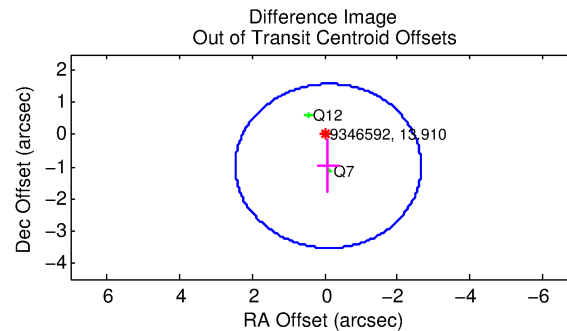
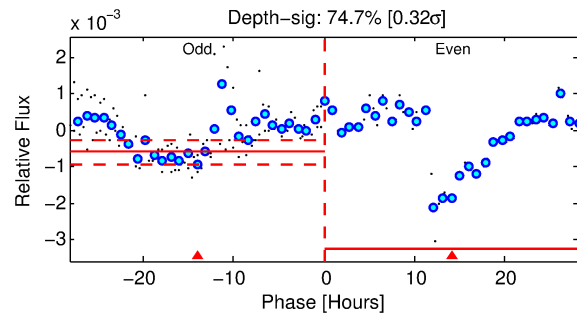
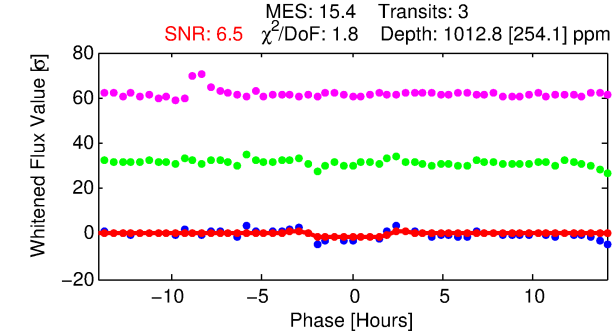
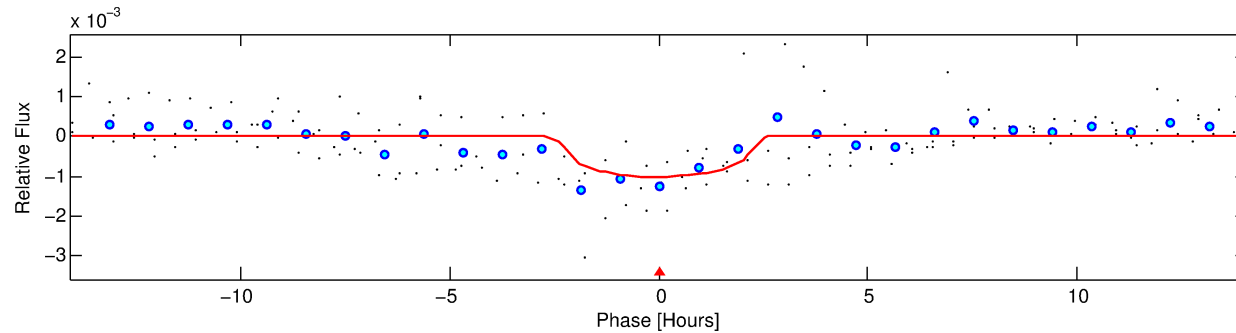
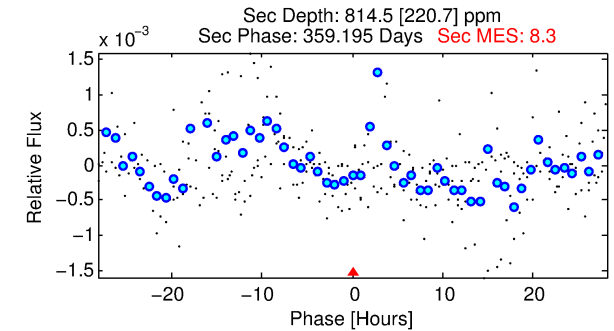
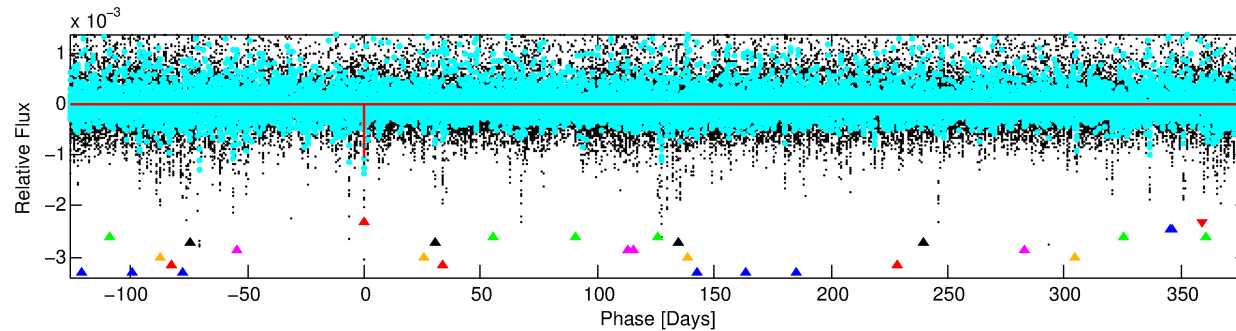
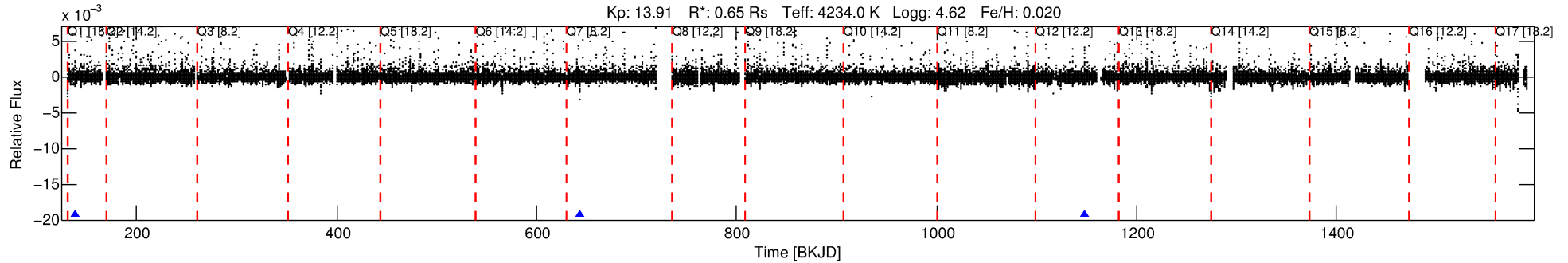
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009346592-01

No Significant Match Found

DV One-Page Summary

KIC: 9346592 Candidate: 1 of 8 Period: 504.747 d



DV Fit Results:

Period = 504.74673 [0.00767] d
Epoch = 138.1098 [0.0113] BKJD
Rp/R* = 0.0286 [0.0379]
a/R* = 783.75 [3138.81]
b = 0.38 [9.28]
Seff = 0.11 [0.02]
Teq = 146 [6] K
Rp = 2.03 [2.69] Re
a = 1.0699 [0.0798] AU
Ag = 124485.72 [331330.98] [0.38 σ]
Teffp = 4228 [2814] K [1.45 σ]

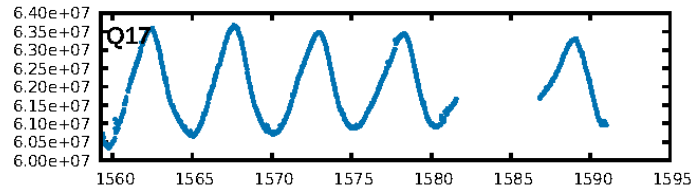
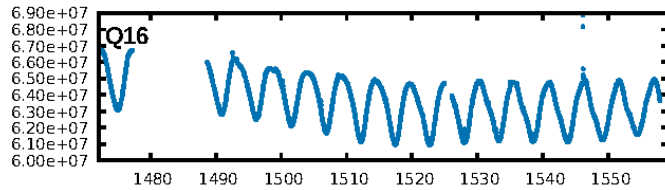
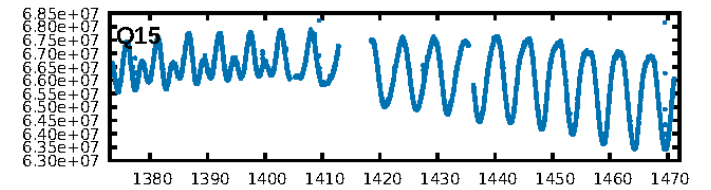
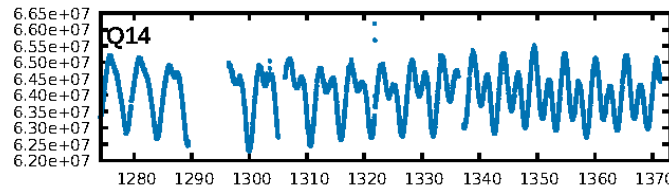
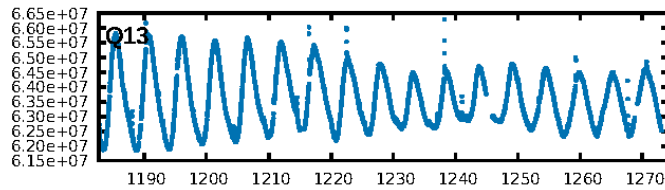
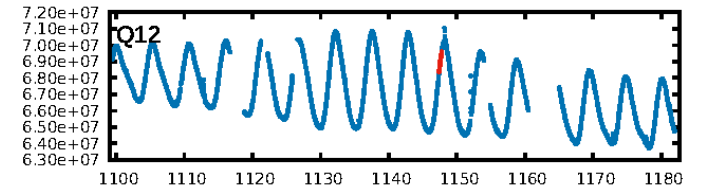
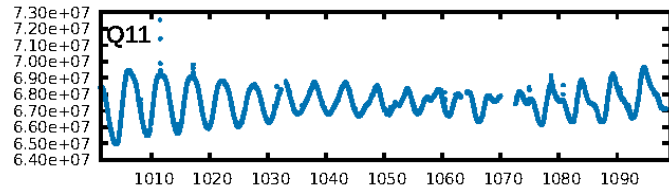
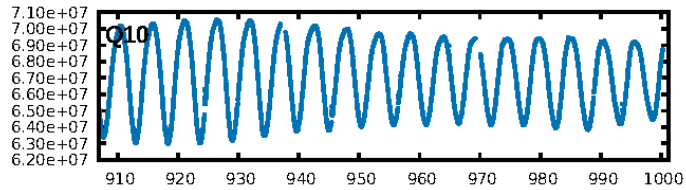
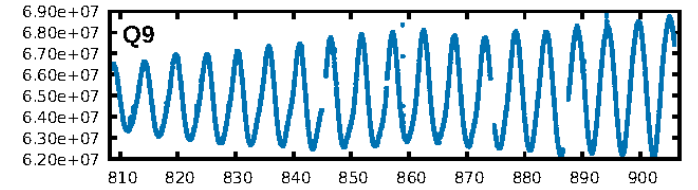
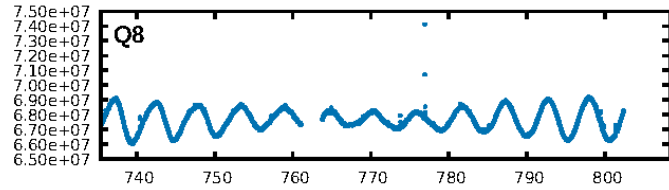
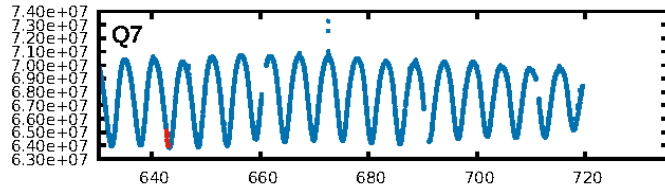
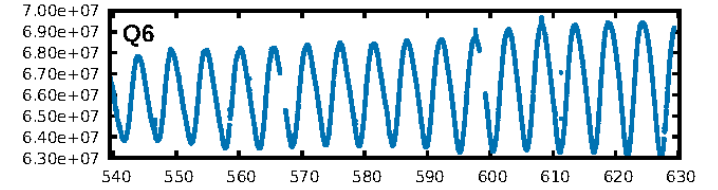
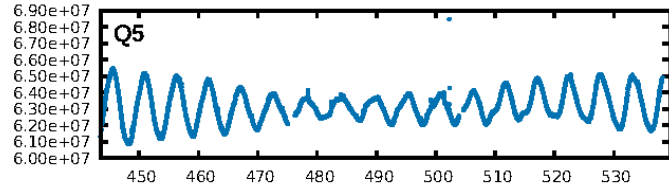
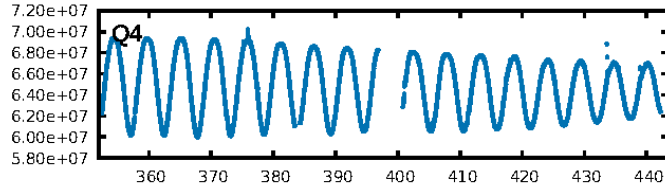
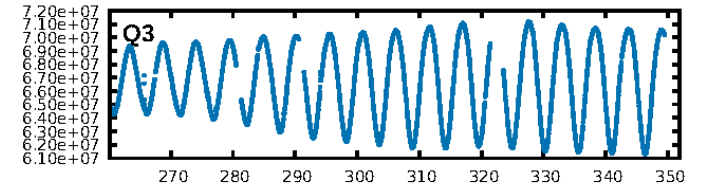
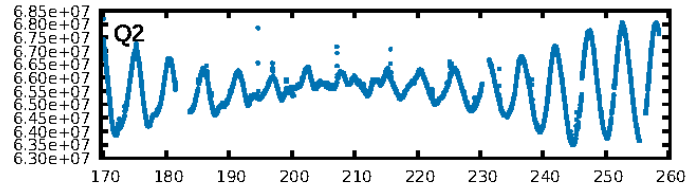
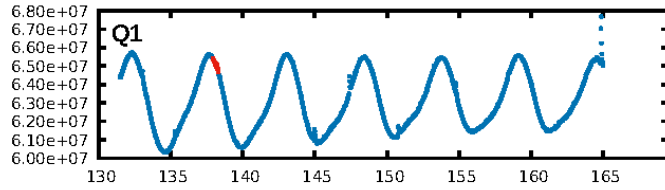
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [410.46 σ]
LongPeriod-sig: 30.6% [0.39 σ]
ModelChiSquare2-sig: 1.0%
ModelChiSquareGof-sig: 47.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.7825
Centroid-sig: 80.4%
Centroid-so: 2.717 arcsec [0.61 σ]
OotOffset-rm: 0.985 arcsec [1.16 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 1.106 arcsec [2.30 σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

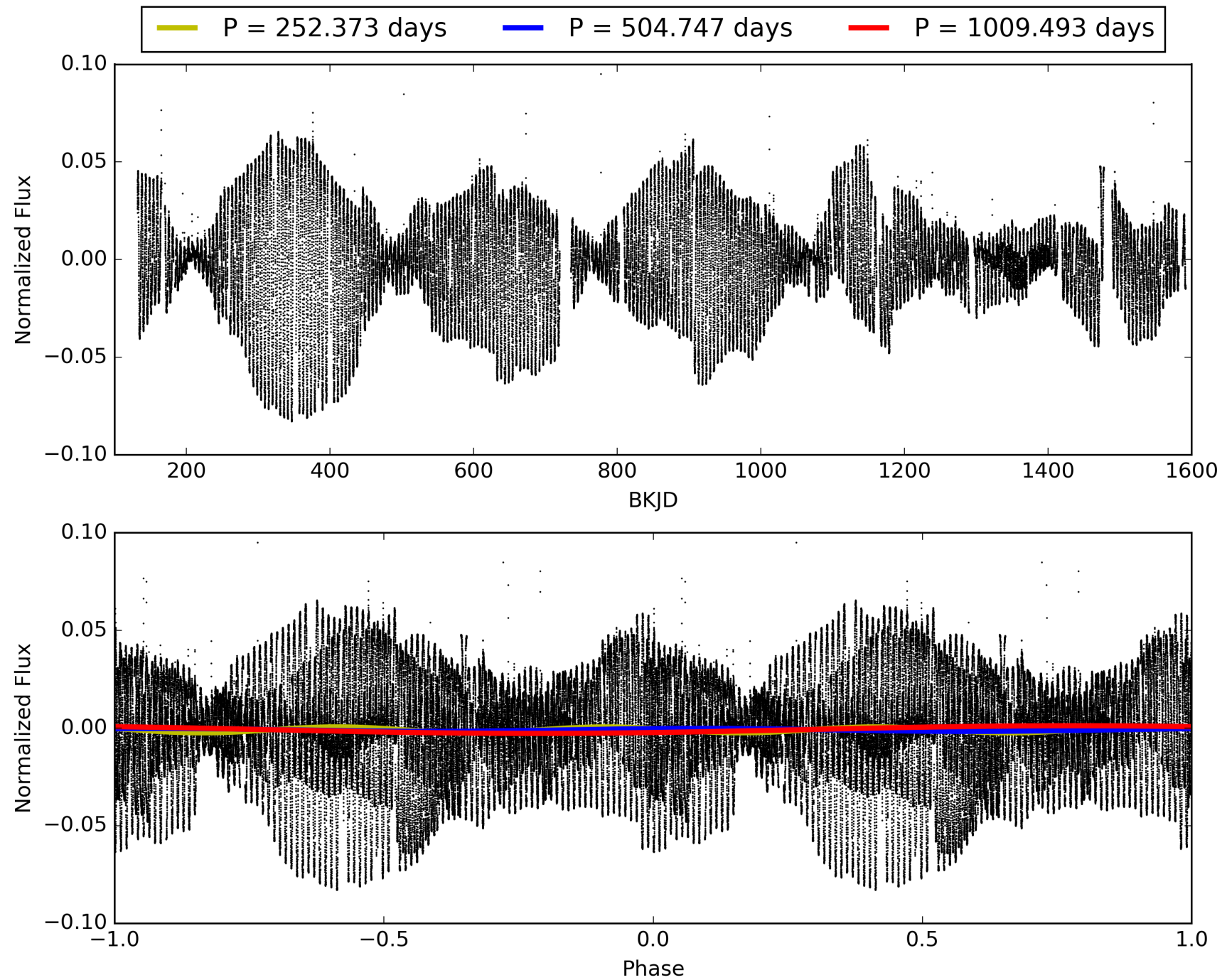
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009346592-01, PDC Light Curves

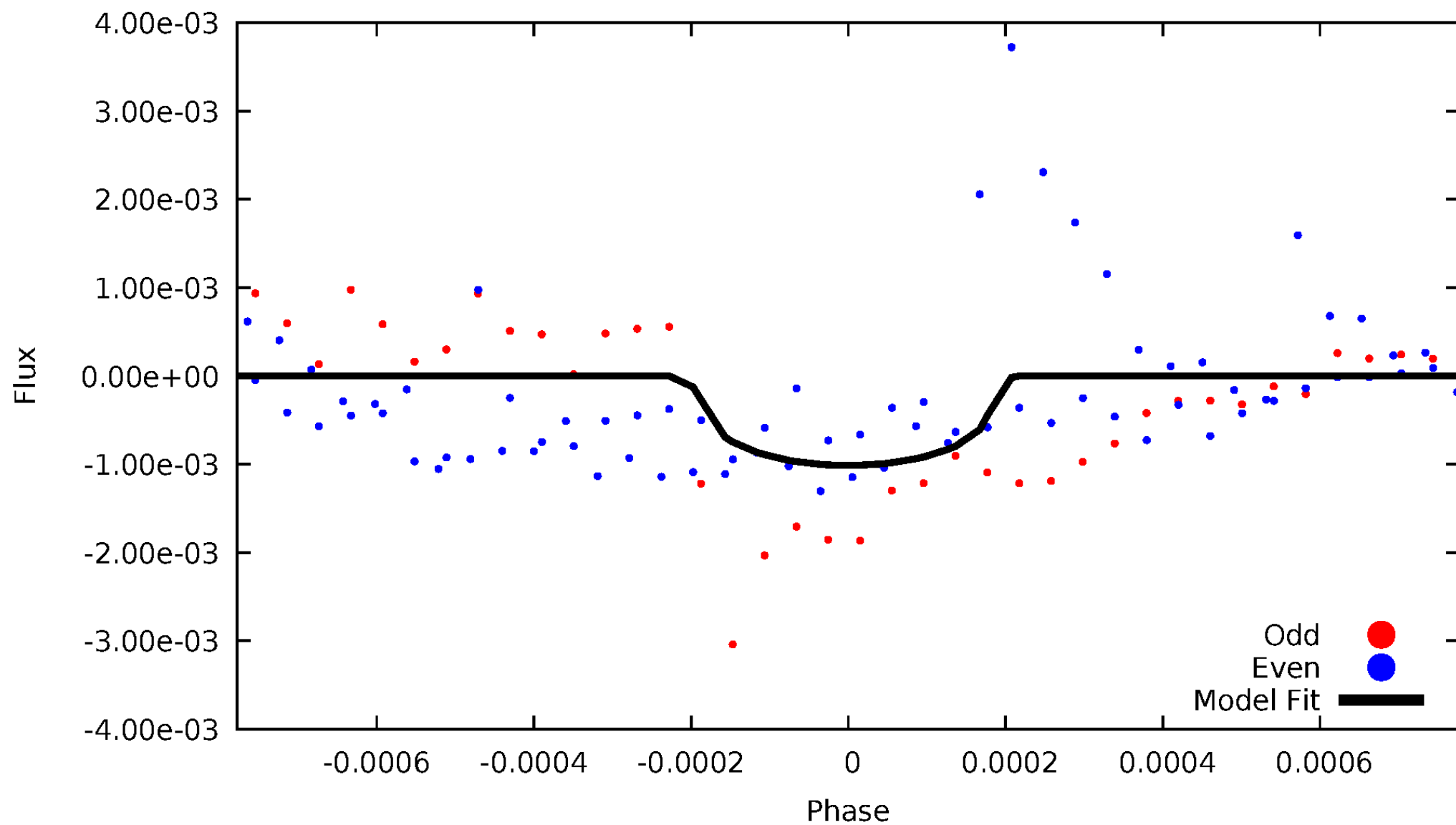


TCE 009346592-01



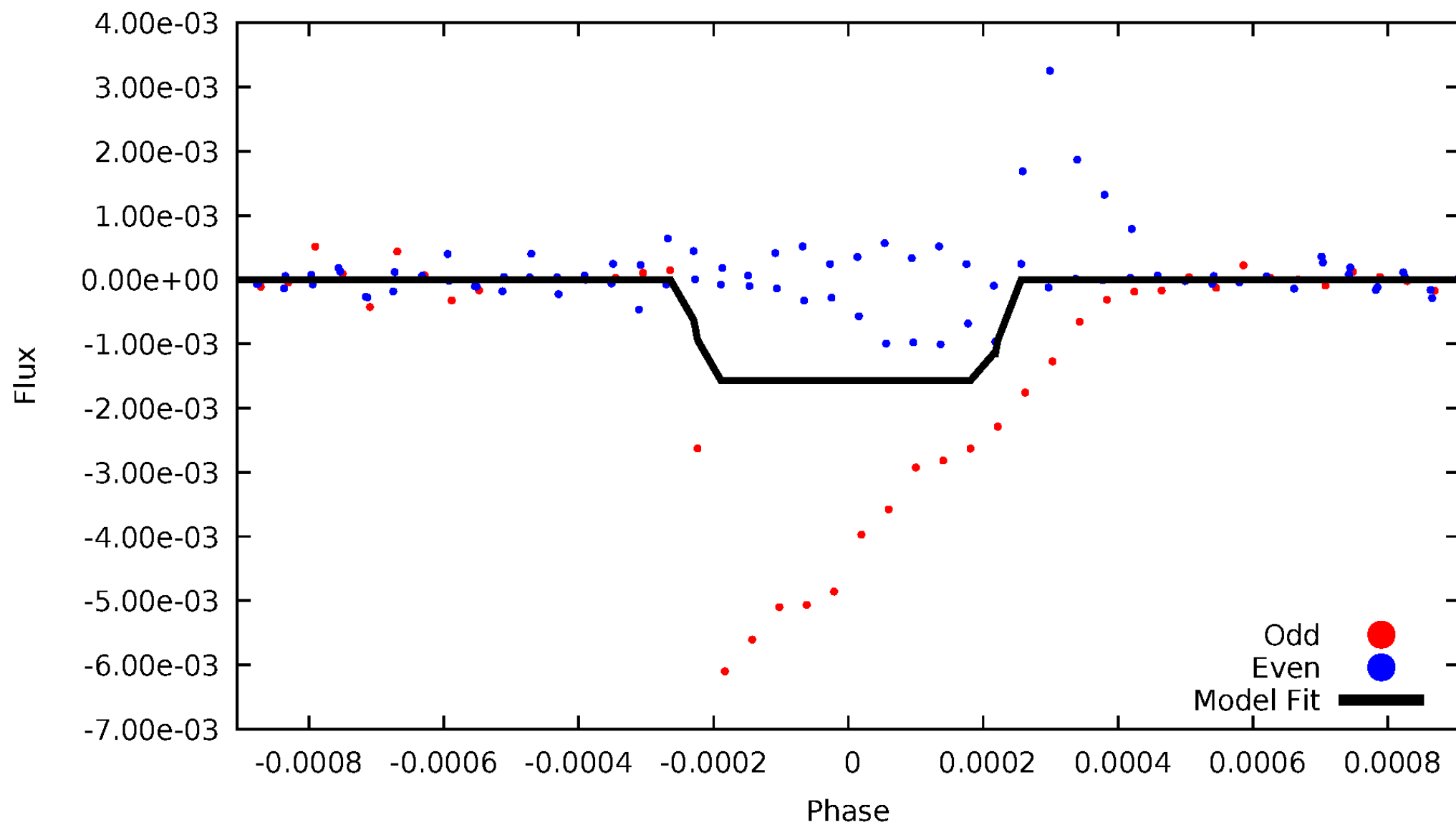
DV Odd/Even

TCE 009346592-01



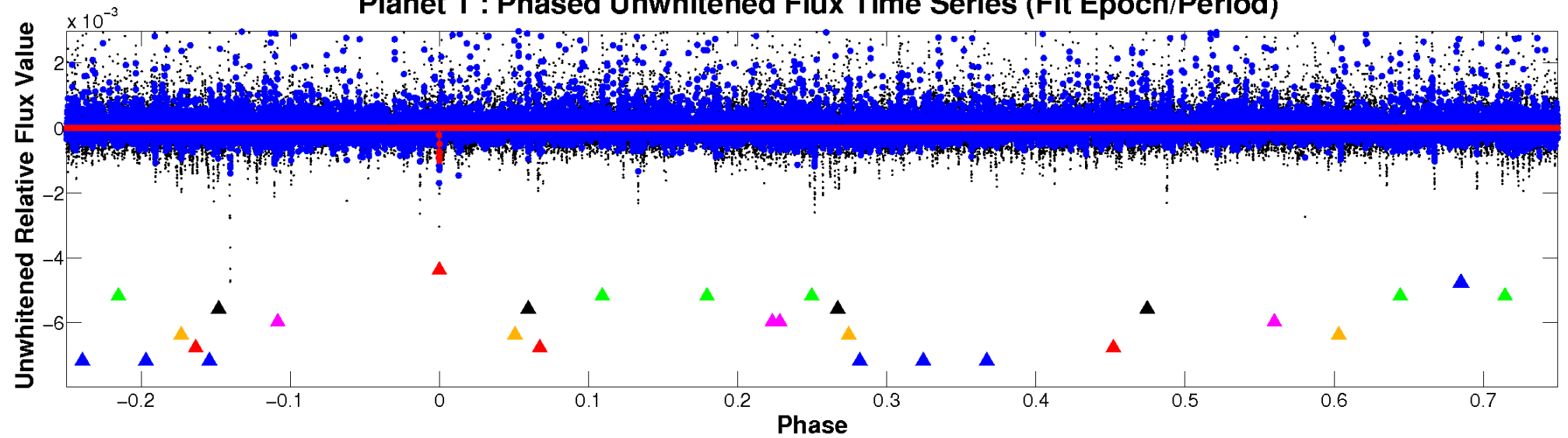
ALT Odd/Even

TCE 009346592-01

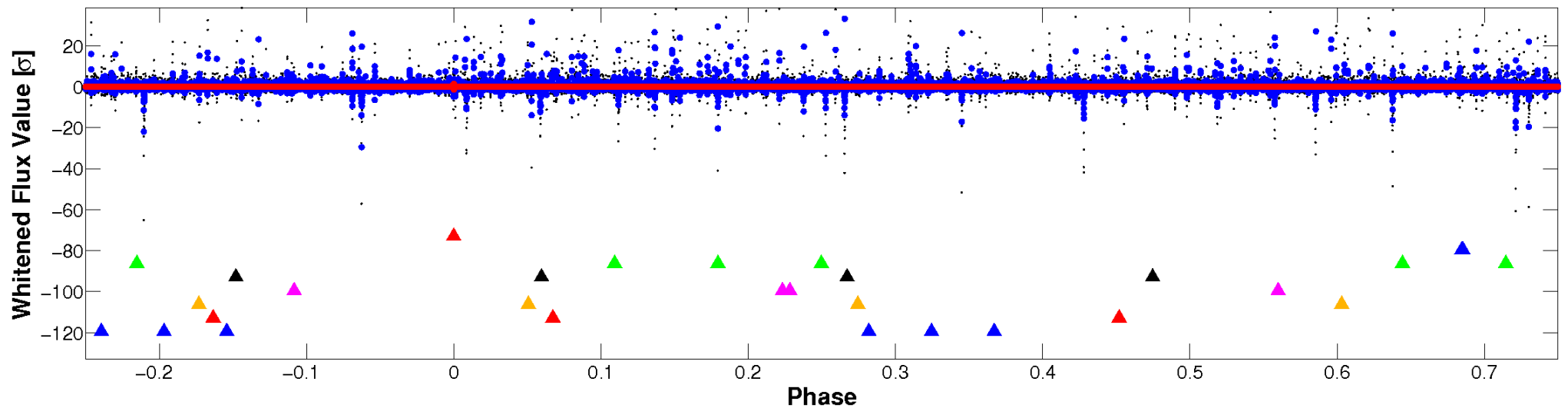


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

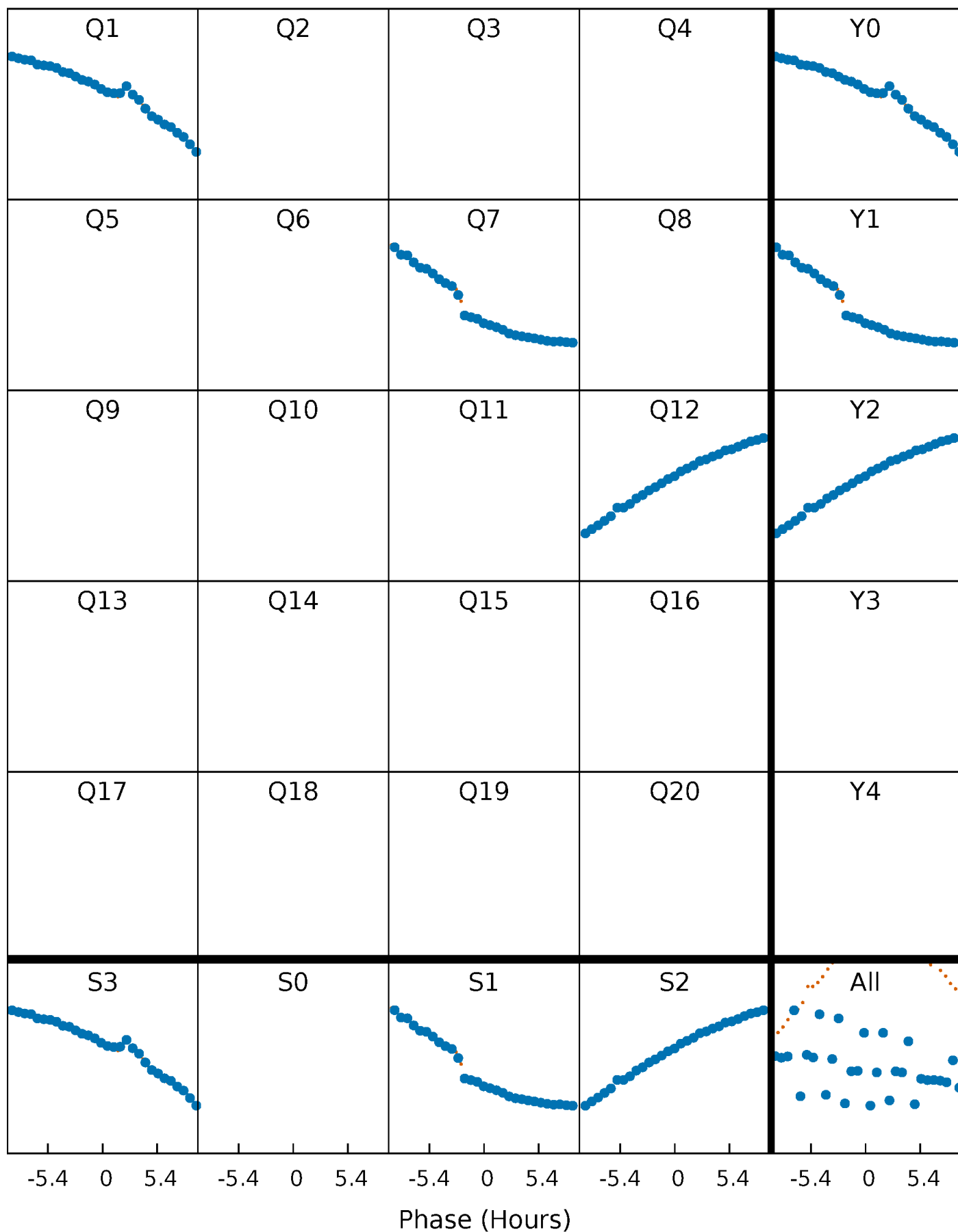


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



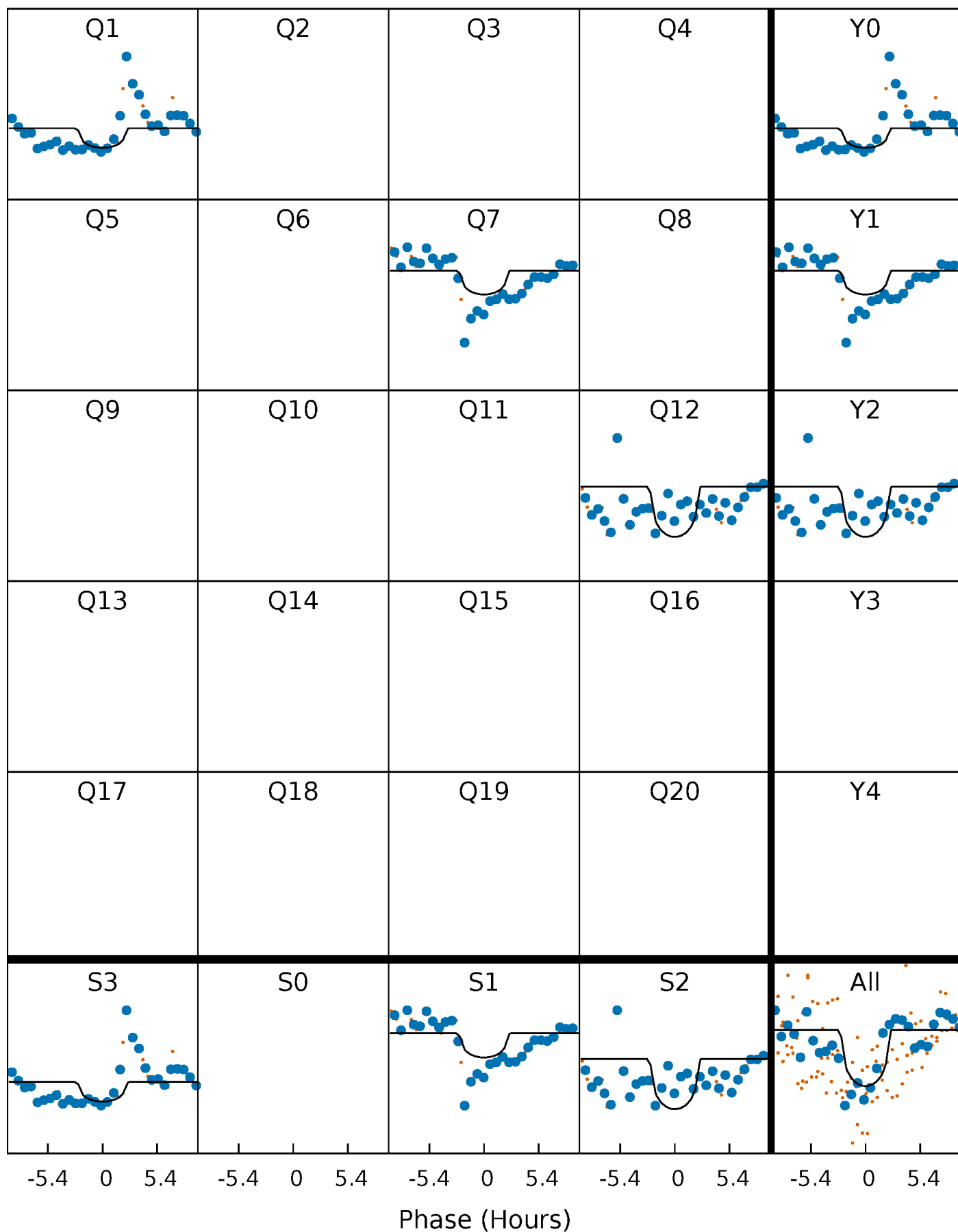
PDC Quarter-Phased Transit Curves

TCE 009346592-01 P=504.746735 Days $T_0=138.109841$ (BKJD)



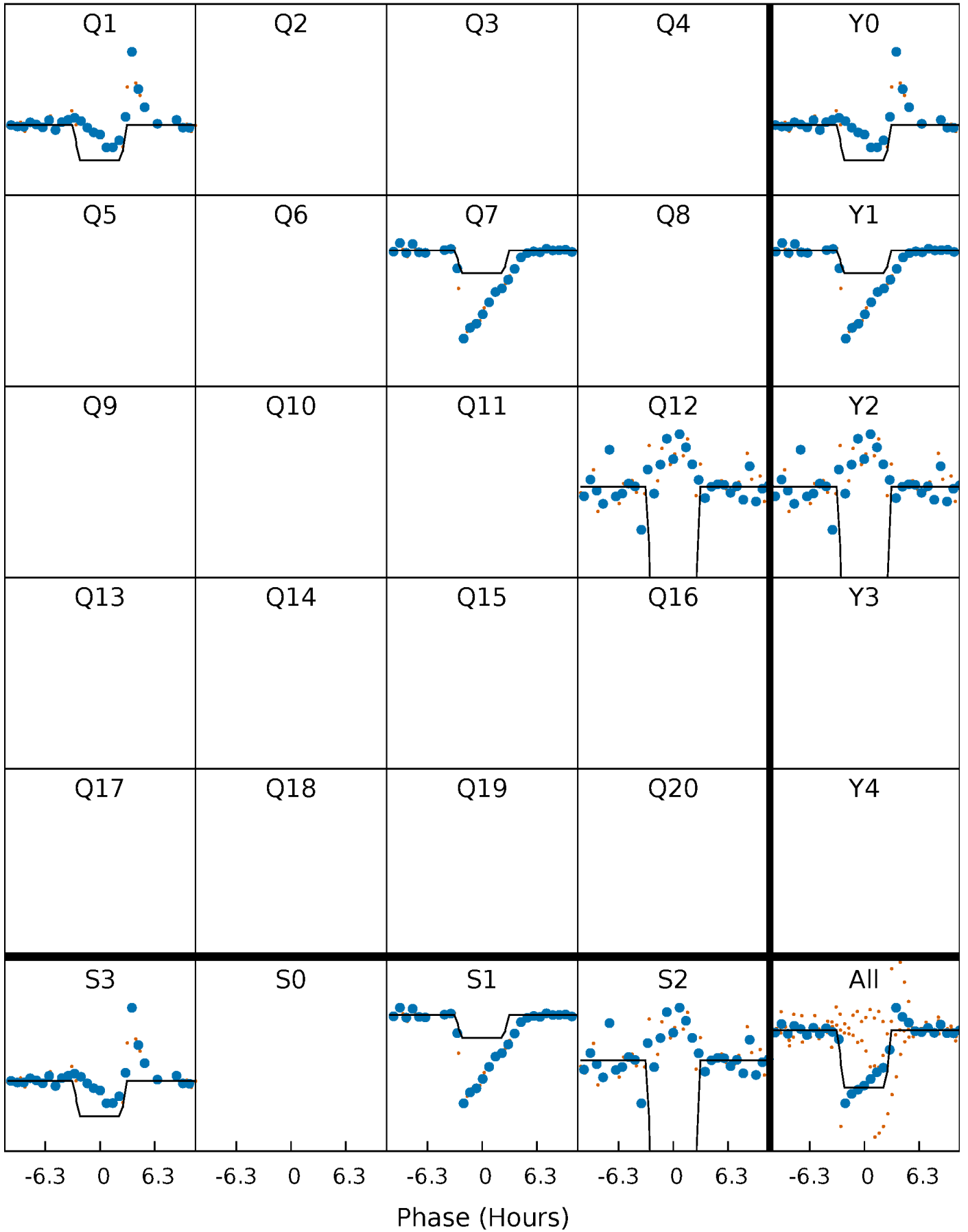
DV Quarter-Phased Transit Curves

TCE 009346592-01 $P=504.746735$ Days $T_0=138.109841$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

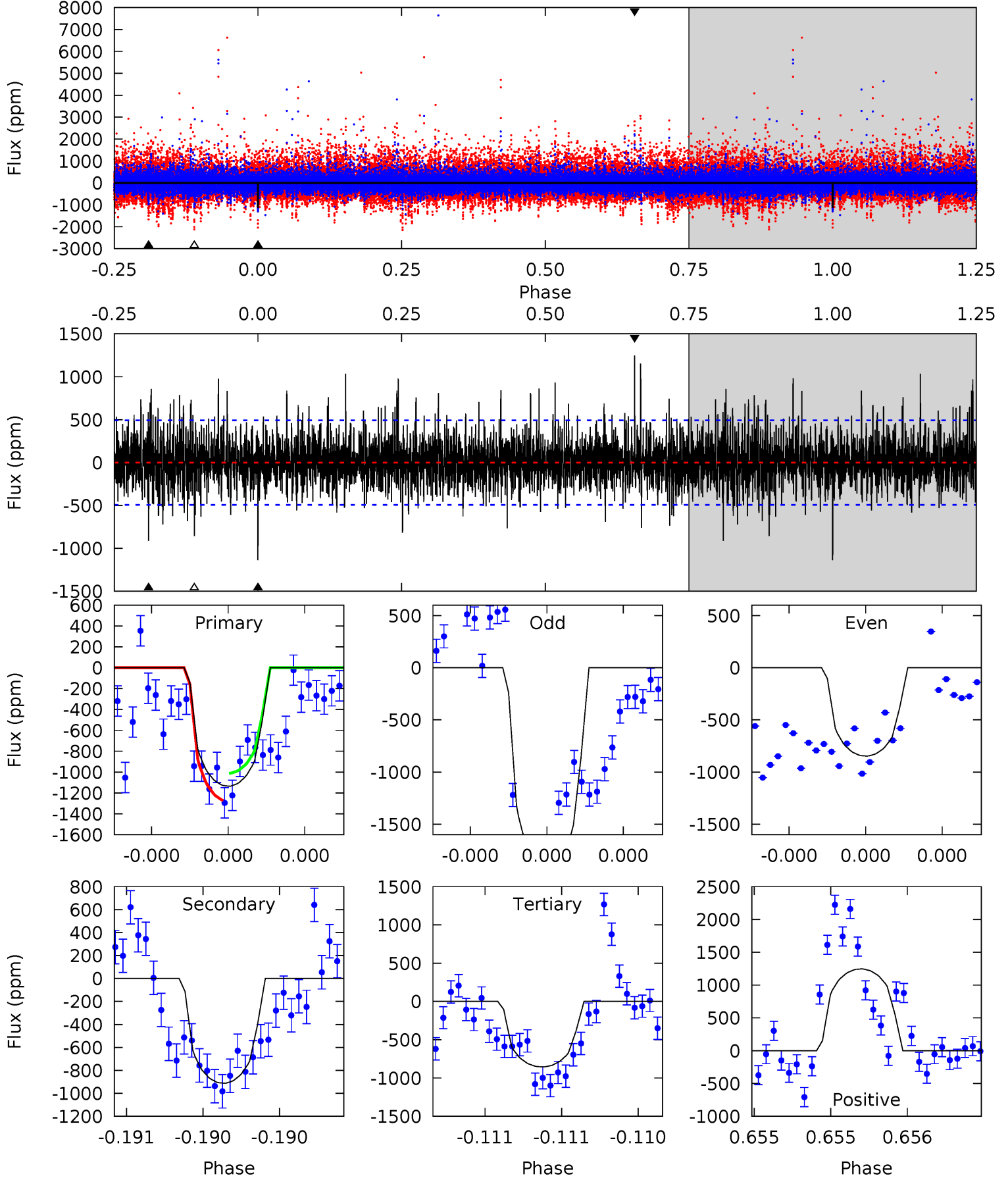
TCE 009346592-01 P=504.811100 Days $T_0=138.063712$ (BKJD)



DV Model-Shift Uniqueness Test

009346592-01, P = 504.746735 Days, E = 138.109841 Days

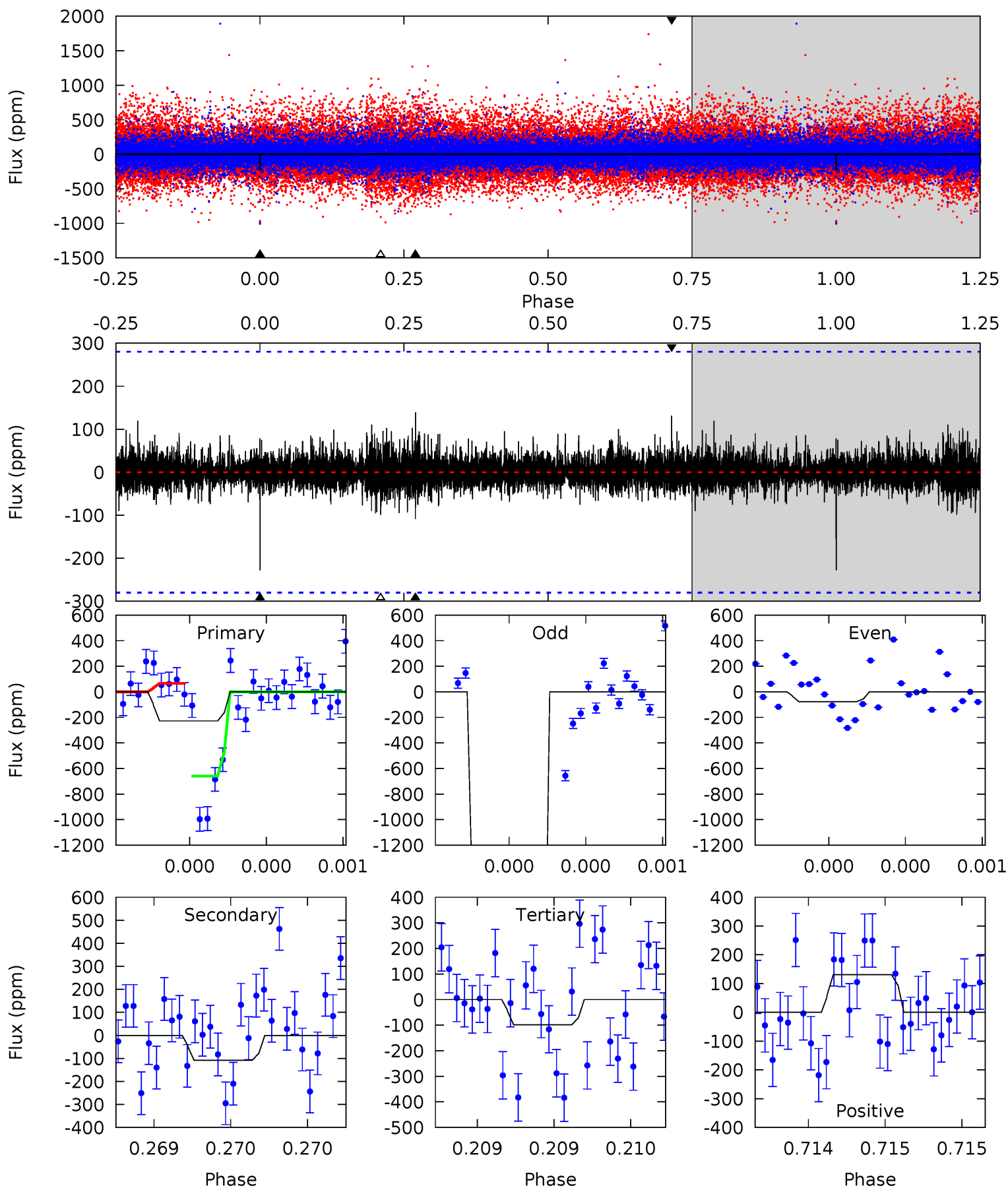
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	10.4	9.75	14.2	5.61	3.54	2.37	3.19	-1.26	0.65	-3.80	3.72	1.33	0.52	1.49



Alt Model-Shift Uniqueness Test

009346592-01, P = 504.811100 Days, E = 138.063712 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.54	2.16	1.97	2.62	5.58	3.49	0.43	2.57	1.92	0.19	-0.46	51.3	2.86	0.38	0



Stellar Parameters For KIC 009346592

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4234^{+128}_{-128}	$4.619^{+0.053}_{-0.018}$	$0.020^{+0.250}_{-0.300}$	$0.650^{+0.036}_{-0.061}$	$0.640^{+0.056}_{-0.056}$	$3.283^{+0.769}_{-0.283}$
	+3%/-3%	+1%/-0%	+1250%/-1500%	+6%/-9%	+9%/-9%	+23%/-9%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009346592-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-913 ± 88	$2.69^{+2.38}_{-1.70}$	202^{+7}_{-7}	3870^{+1982}_{-724}	$80473^{+534465}_{-58574}$
Alt.	-108 ± 50	$3.18^{+2.69}_{-1.94}$	202^{+6}_{-7}	2661^{+834}_{-386}	6106^{+34714}_{-4361}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

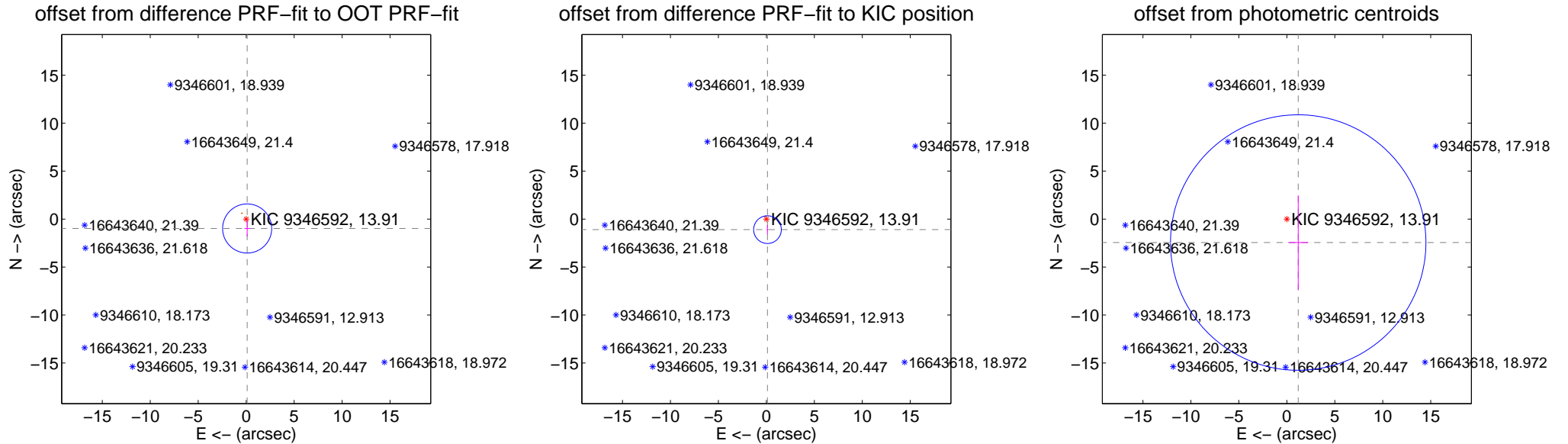
DV Centroid Data

Supplemental centroid analysis for 009346592-01. Kepler magnitude: 13.91. Transit SNR 6.50

There are 1 quarters with good PRF difference image offsets

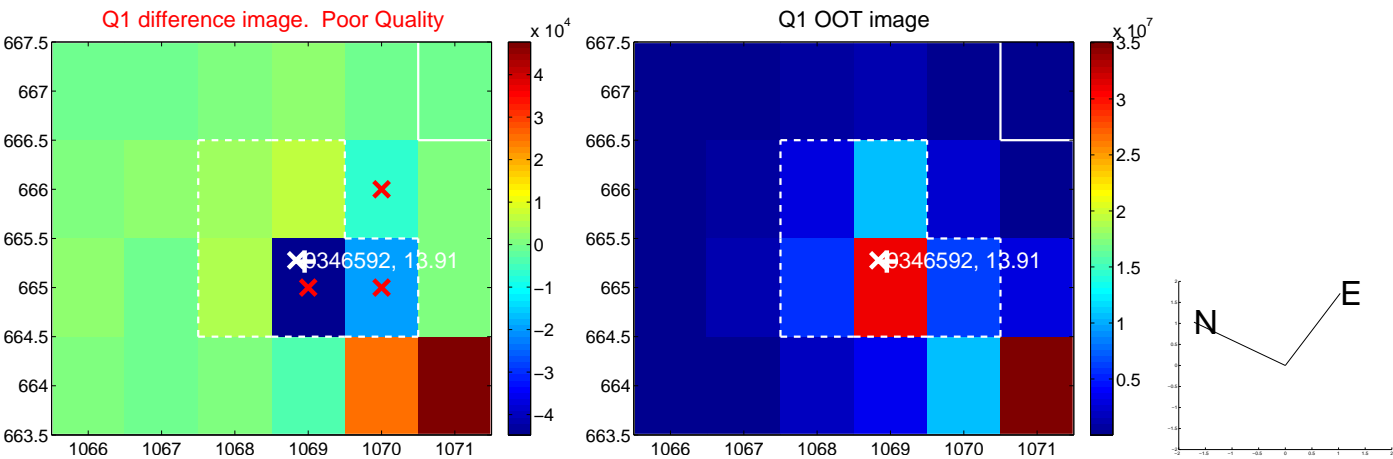
The direct PRF centroid is offset from the target star catalog position by about 0.49 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.985 ± 0.853	1.16	-0.102 ± 0.288	-0.980 ± 0.828
PRF-fit source offset from KIC position	1.106 ± 0.481	2.30	-0.116 ± 0.087	-1.100 ± 0.483
photometric centroid source offset	2.72 ± 4.44	0.61	-1.19 ± 1.05	-2.45 ± 4.91

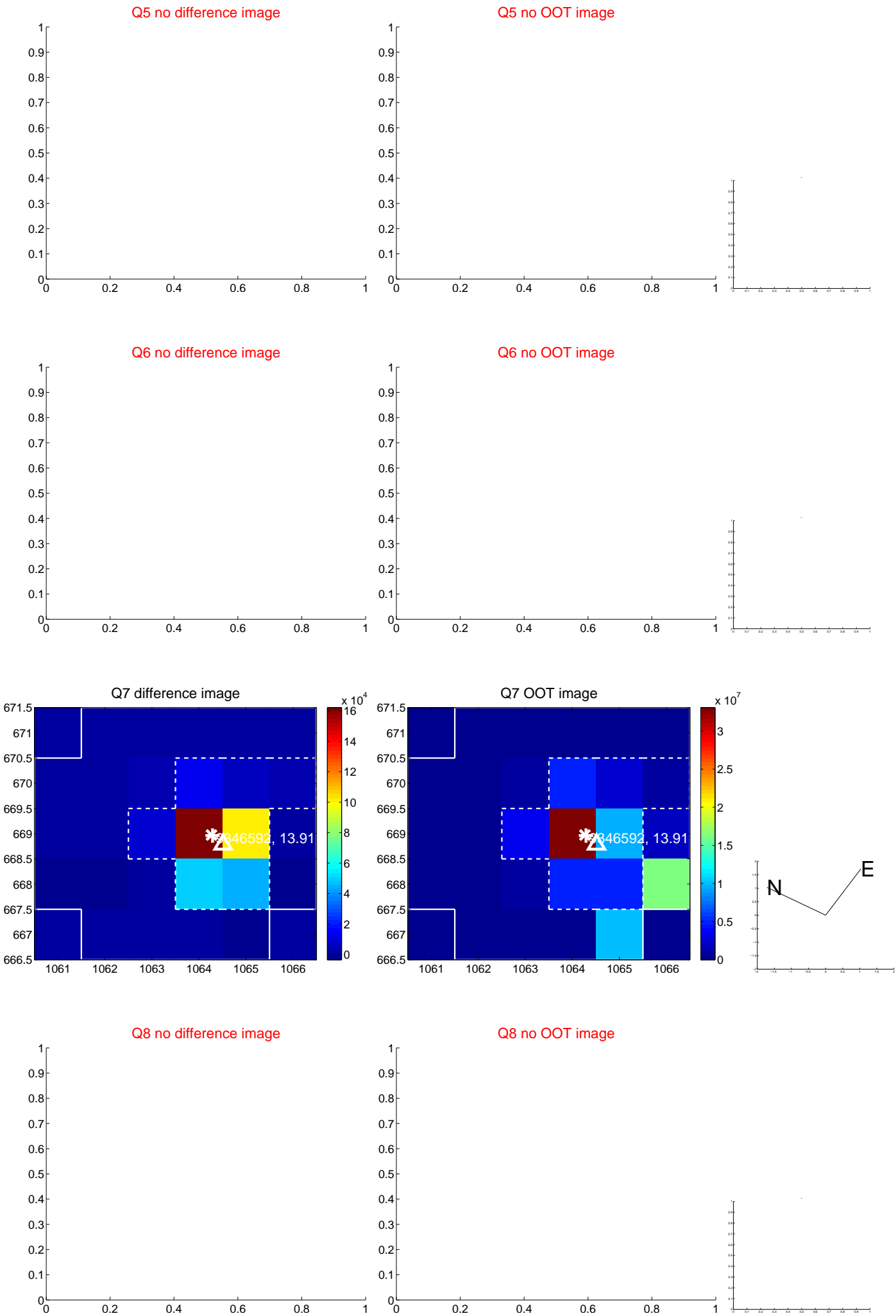


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

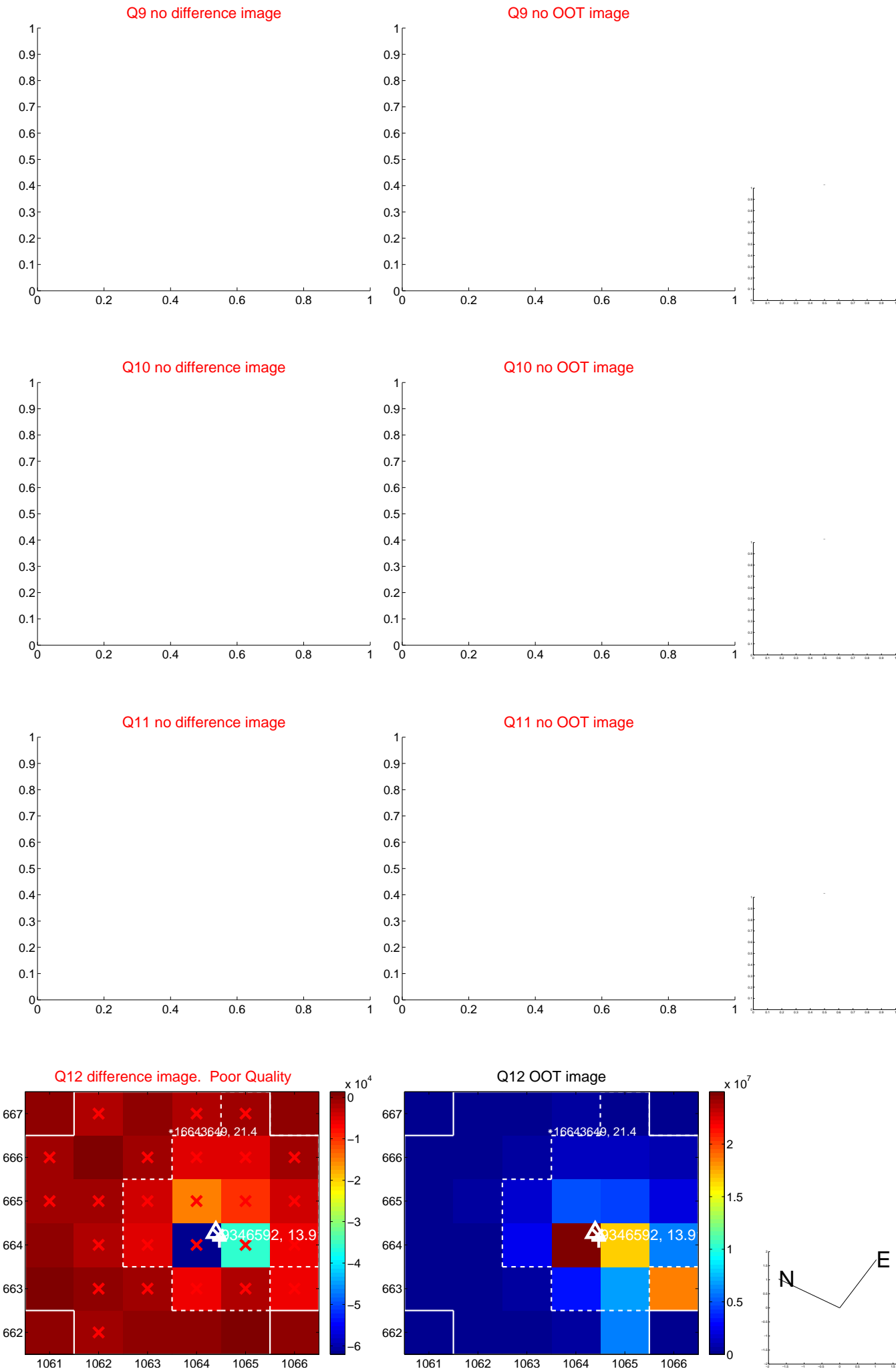
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



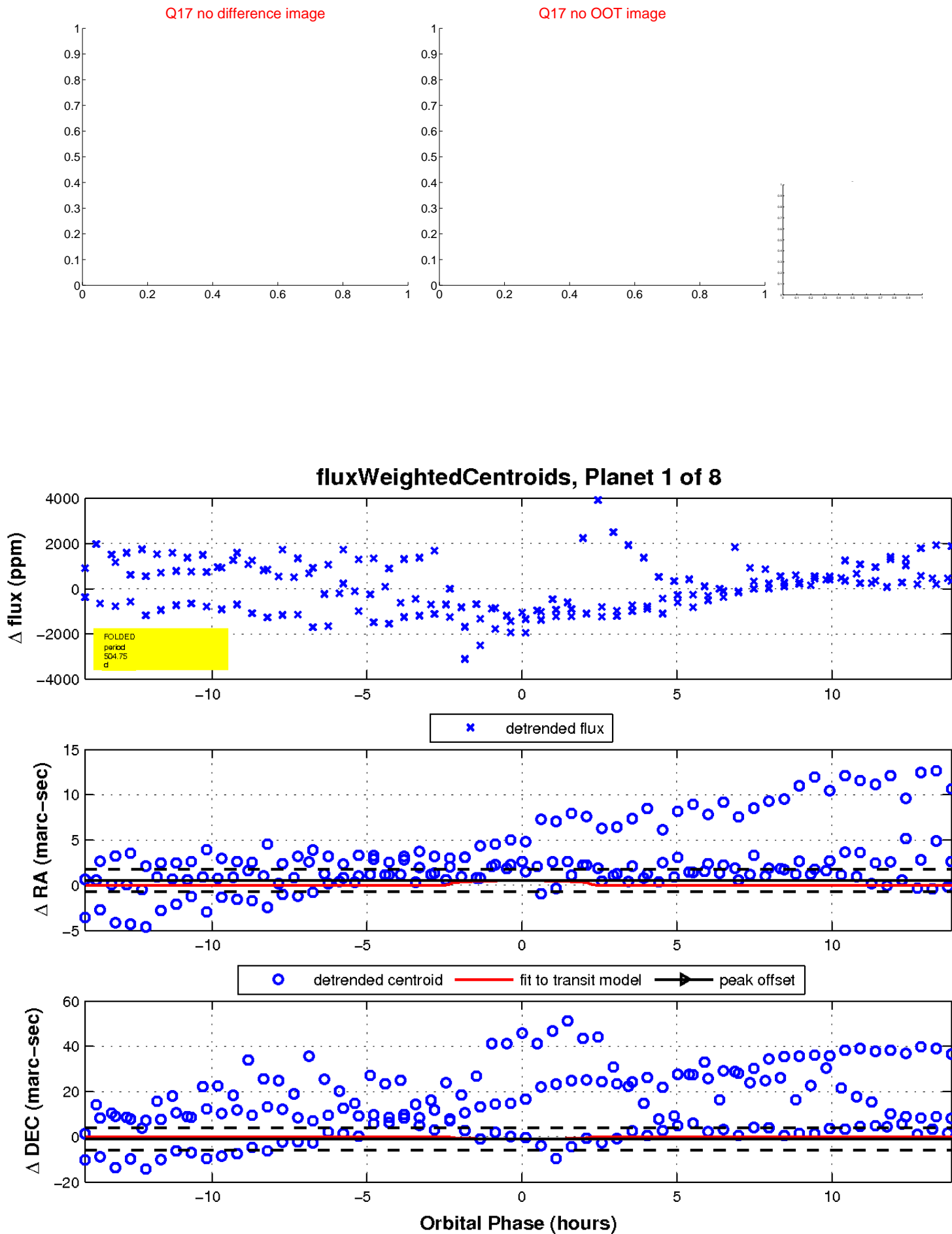
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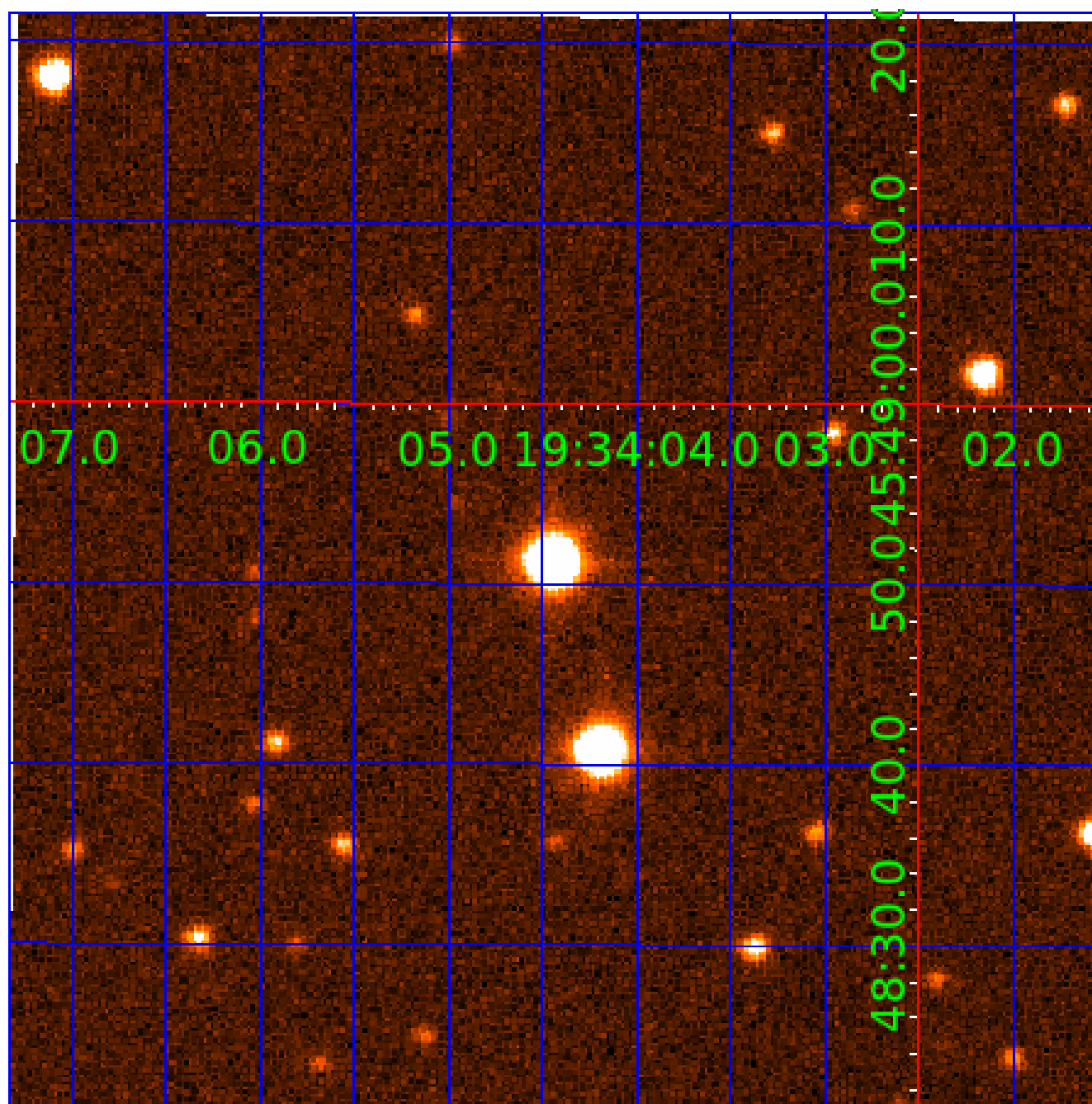


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UKIRT Image

Declination



KIC 009346592

Q1-17 DR25 TCE Parameters

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009346592-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
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N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

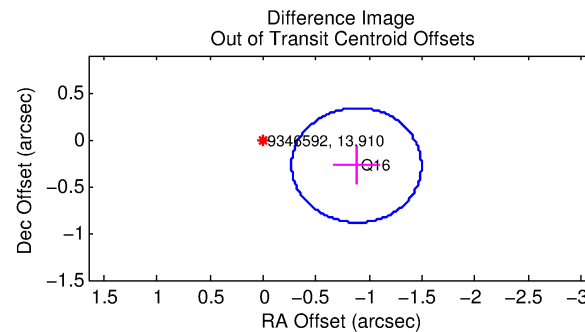
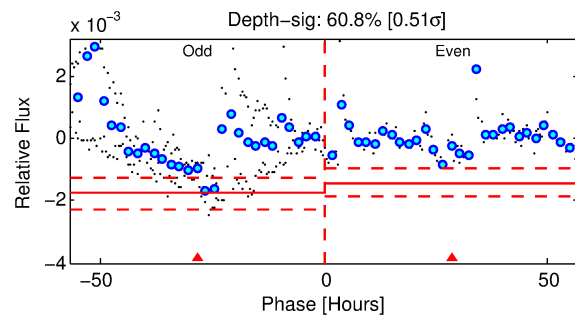
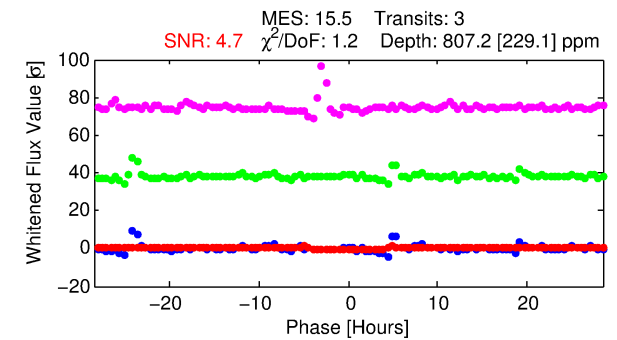
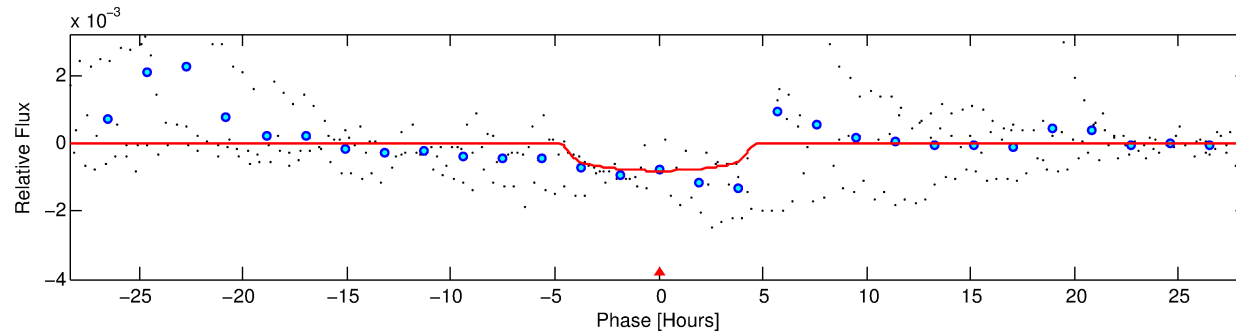
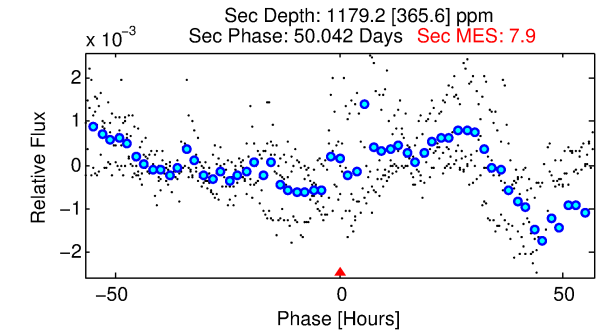
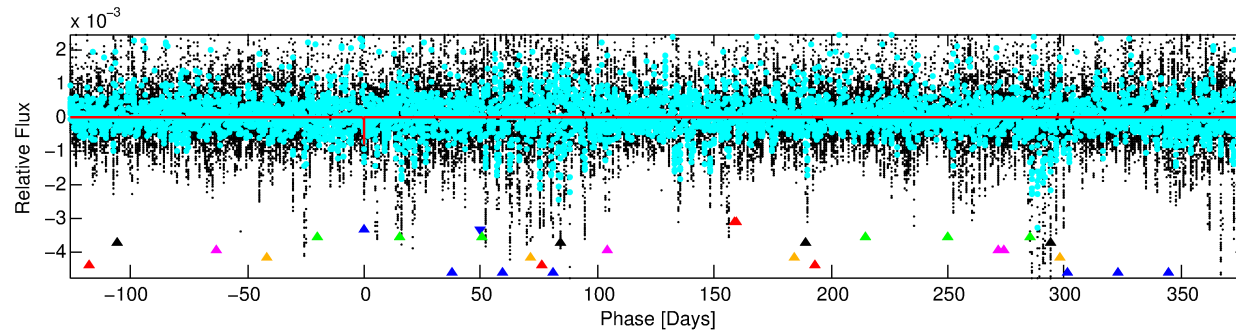
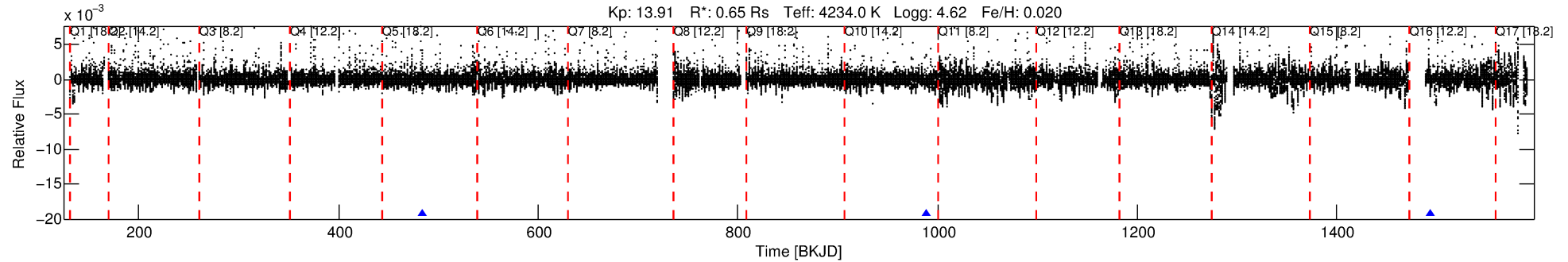
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009346592-02

No Significant Match Found

DV One-Page Summary

KIC: 9346592 Candidate: 2 of 8 Period: 504.920 d



DV Fit Results:

Period = 504.91979 [0.01169] d
Epoch = 483.7291 [0.0160] BKJD
Rp/R* = 0.0297 [0.0082]
a/R* = 254.34 [187.85]
b = 0.82 [0.30]
Seff = 0.11 [0.02]
Teq = 146 [6] K
Rp = 2.11 [0.62] Re
a = 1.0702 [0.0799] AU
Ag = 167654.01 [108013.07] [1.55 σ]
Teffp = 4554 [737] K [5.98 σ]

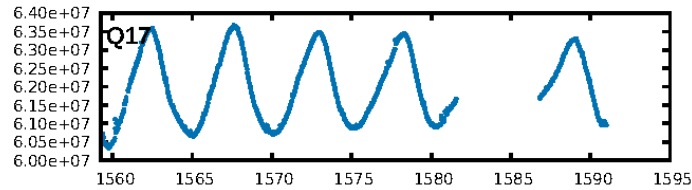
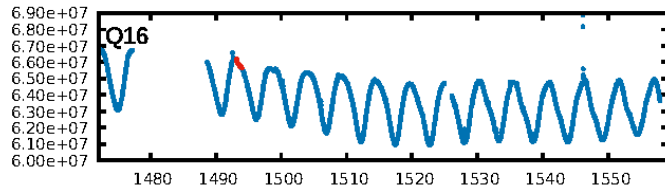
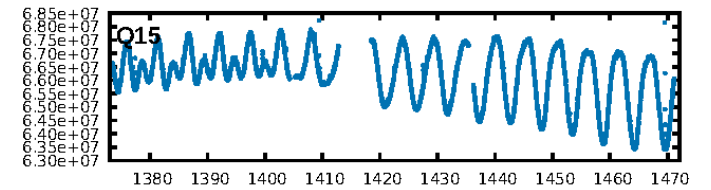
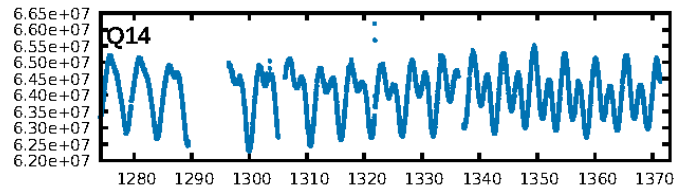
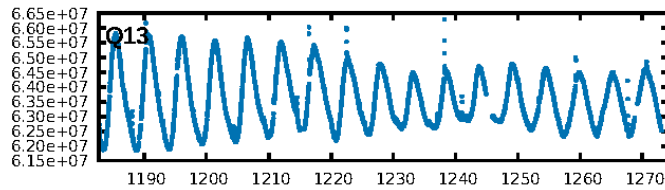
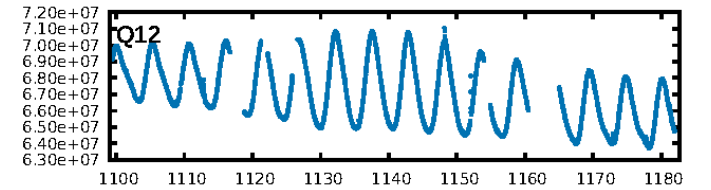
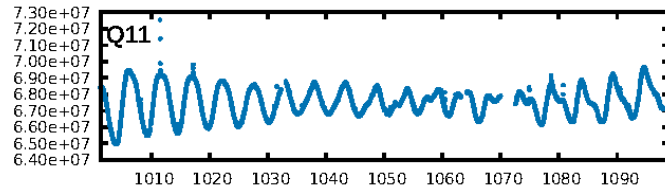
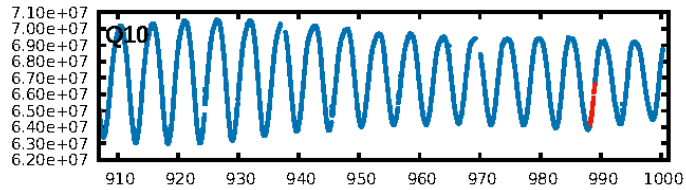
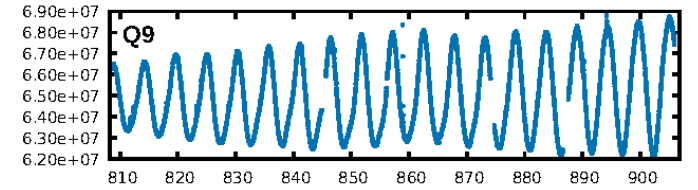
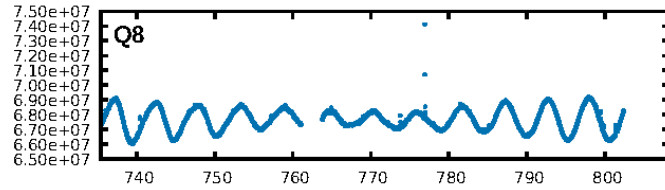
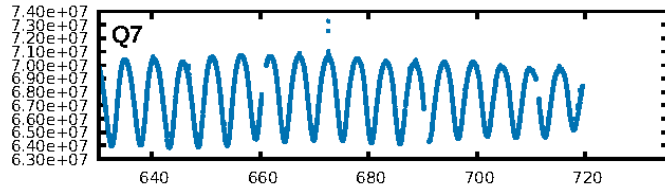
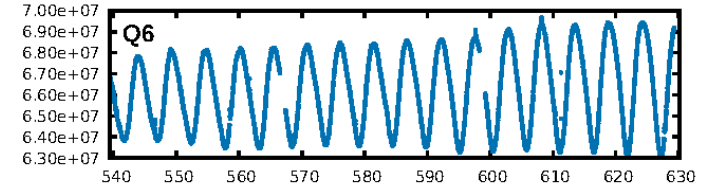
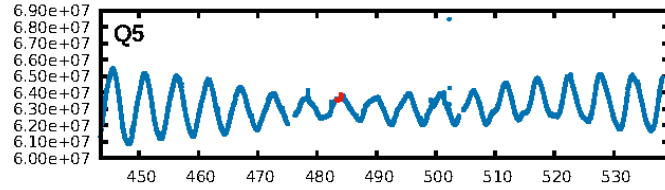
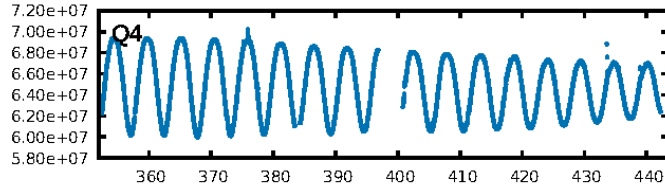
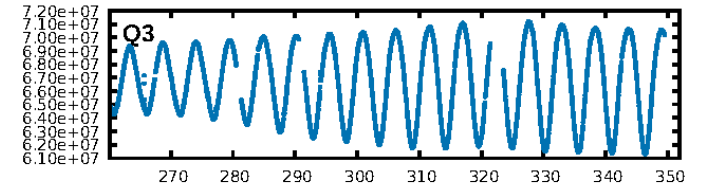
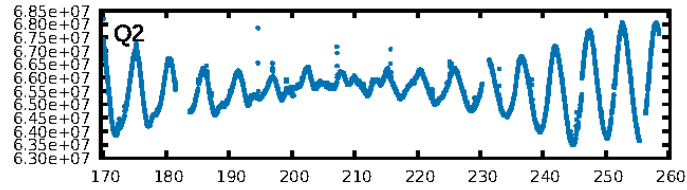
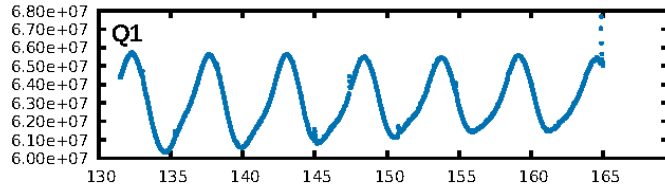
DV Diagnostic Results:

ShortPeriod-sig: 30.6% [0.39 σ]
LongPeriod-sig: 100.0% [387.61 σ]
ModelChiSquare2-sig: 21.9%
ModelChiSquareGof-sig: 91.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.043
Centroid-sig: 19.9%
Centroid-so: 3.681 arcsec [0.60 σ]
OotOffset-rm: 0.923 arcsec [4.52 σ]
KicOffset-rm: 0.155 arcsec [0.46 σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

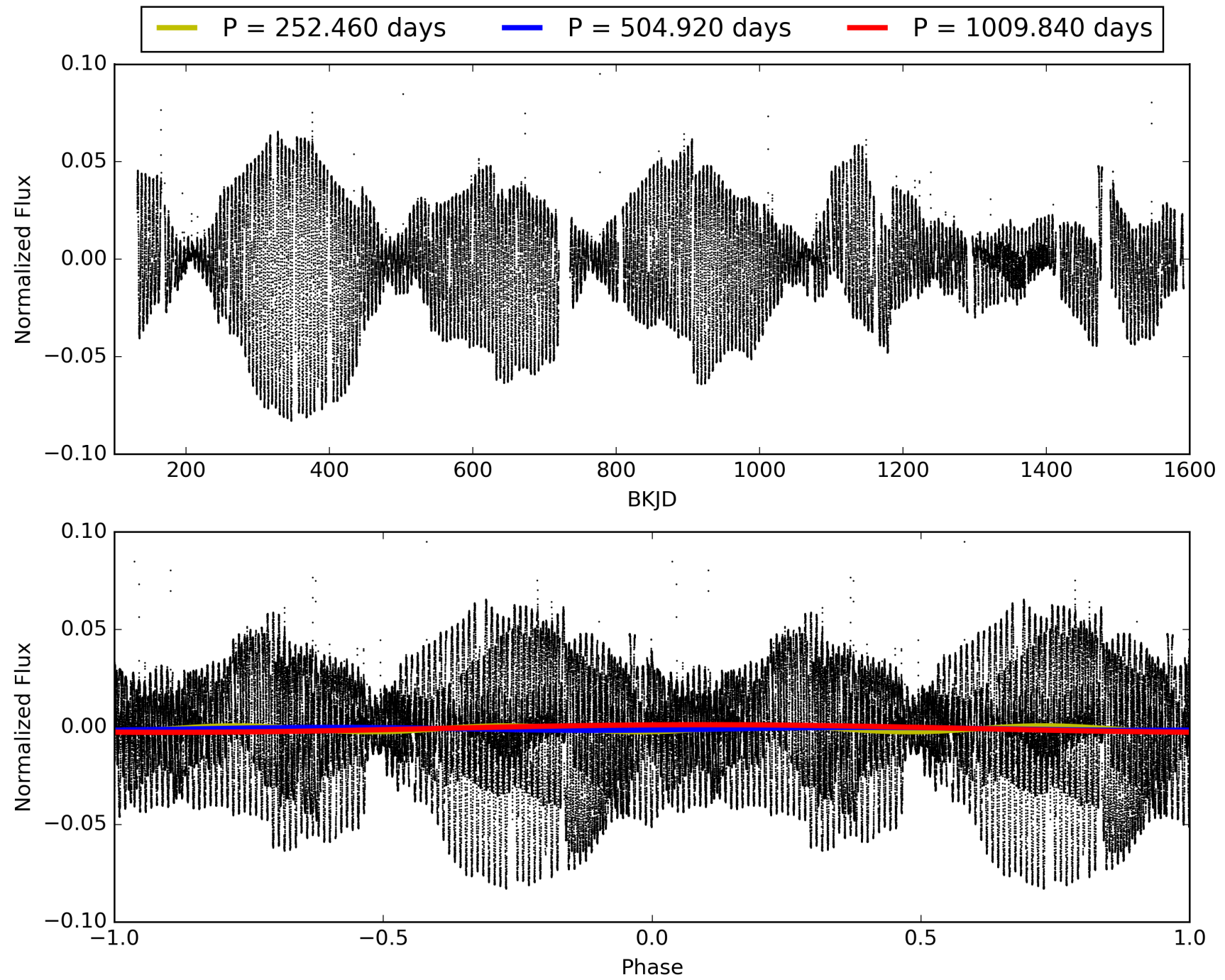
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:26:23 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009346592-02, PDC Light Curves

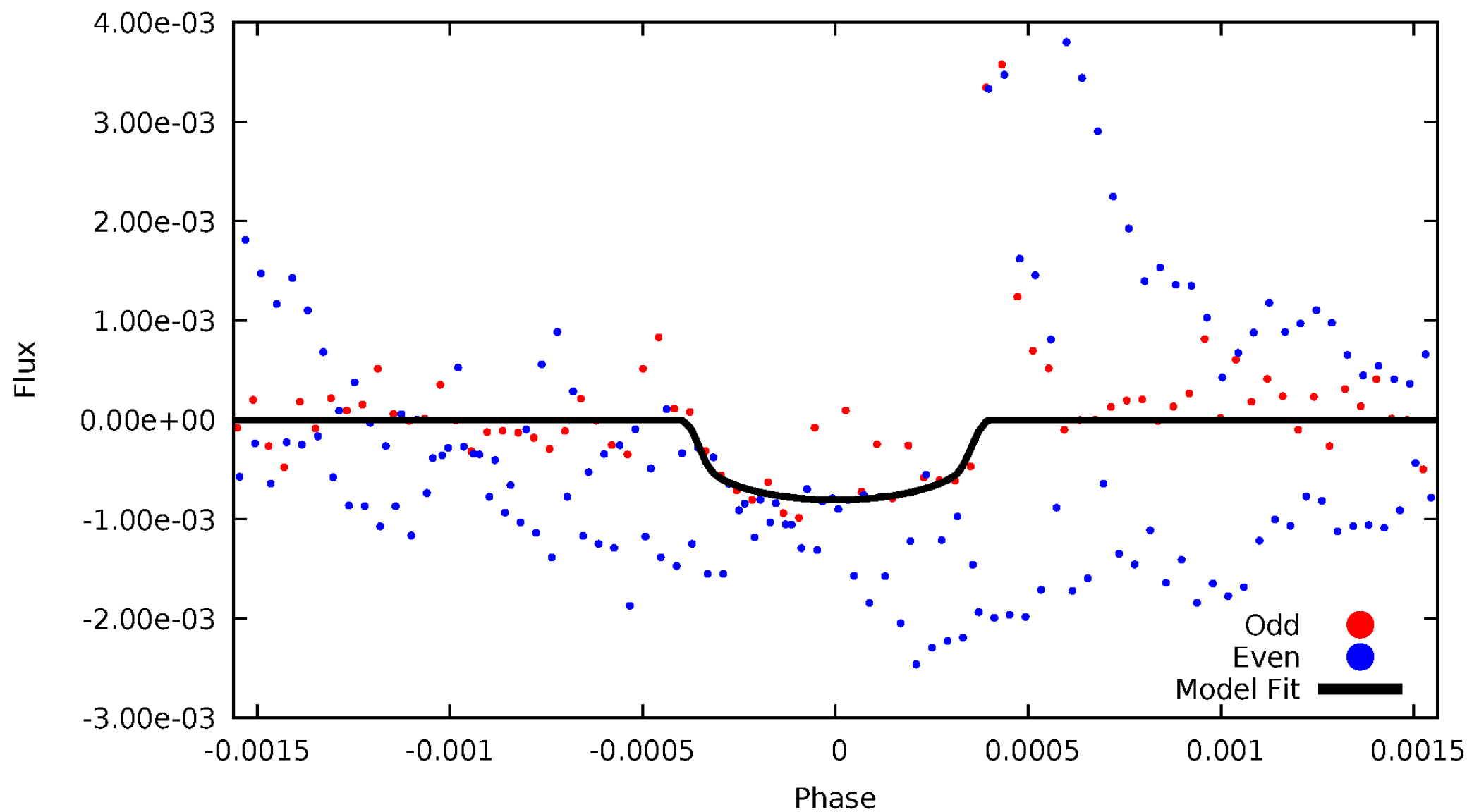


TCE 009346592-02



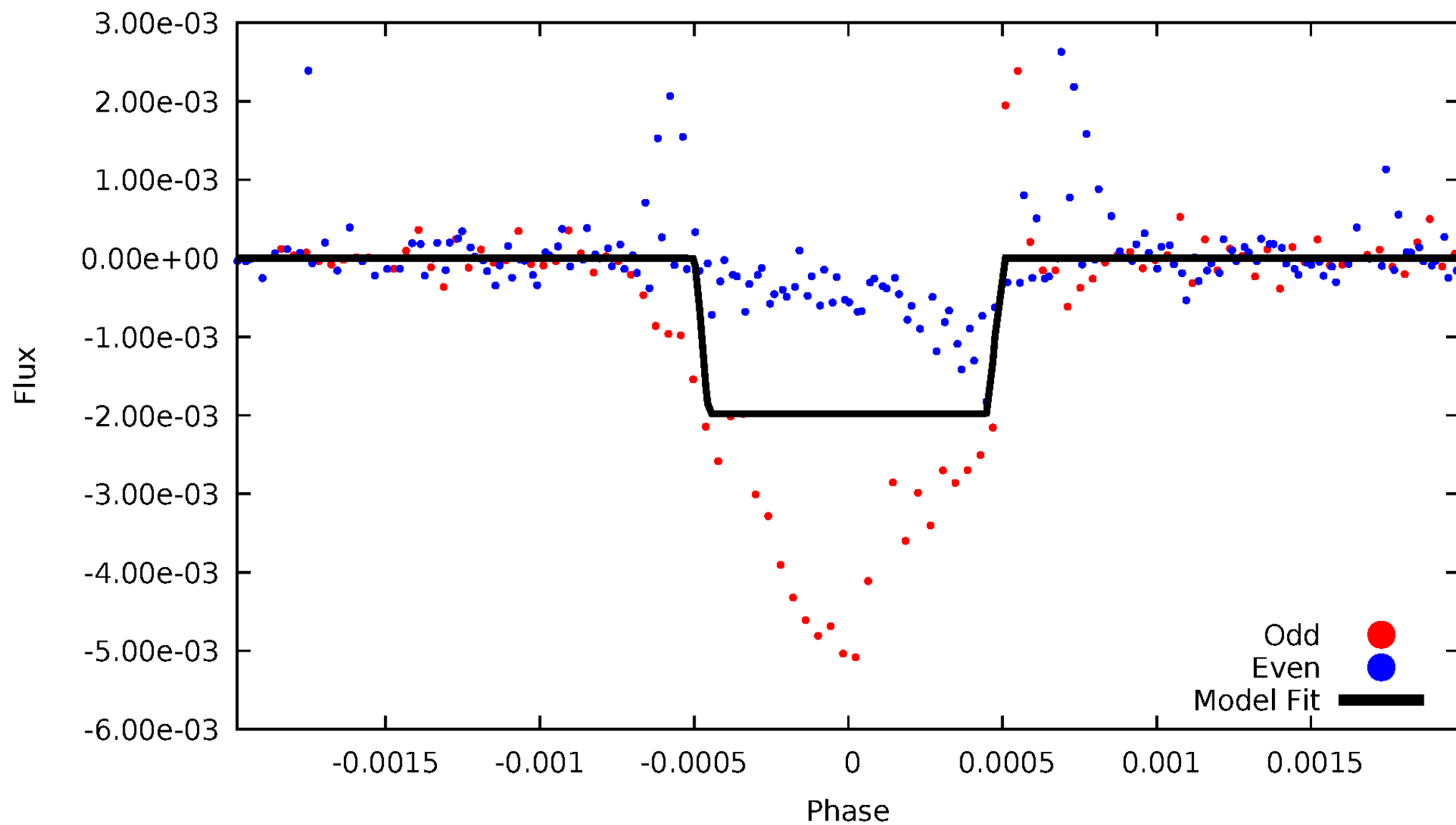
DV Odd/Even

TCE 009346592-02



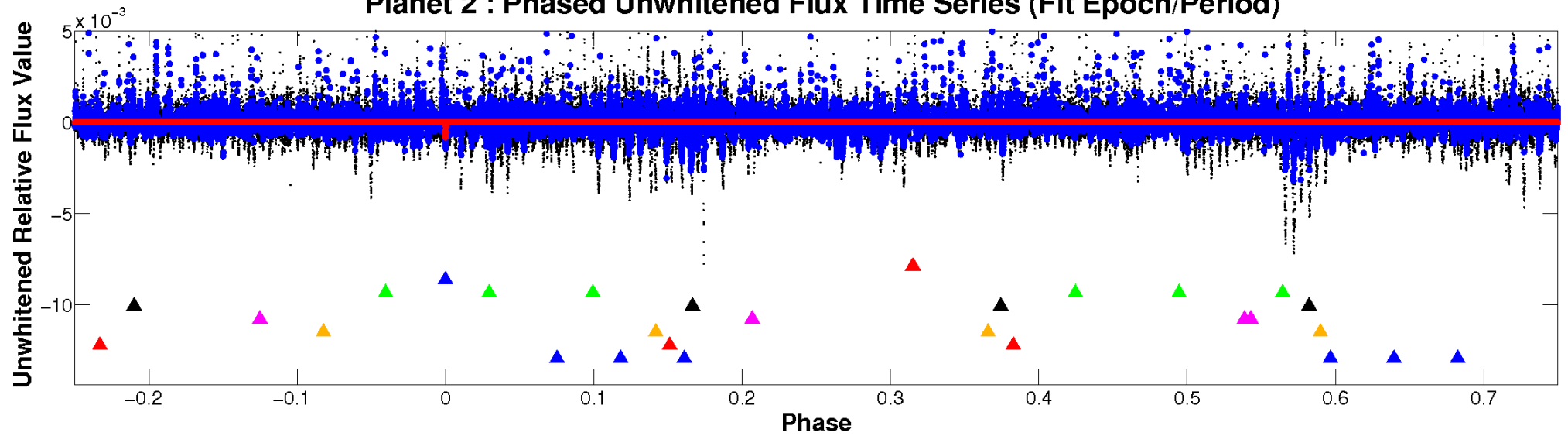
ALT Odd/Even

TCE 009346592-02

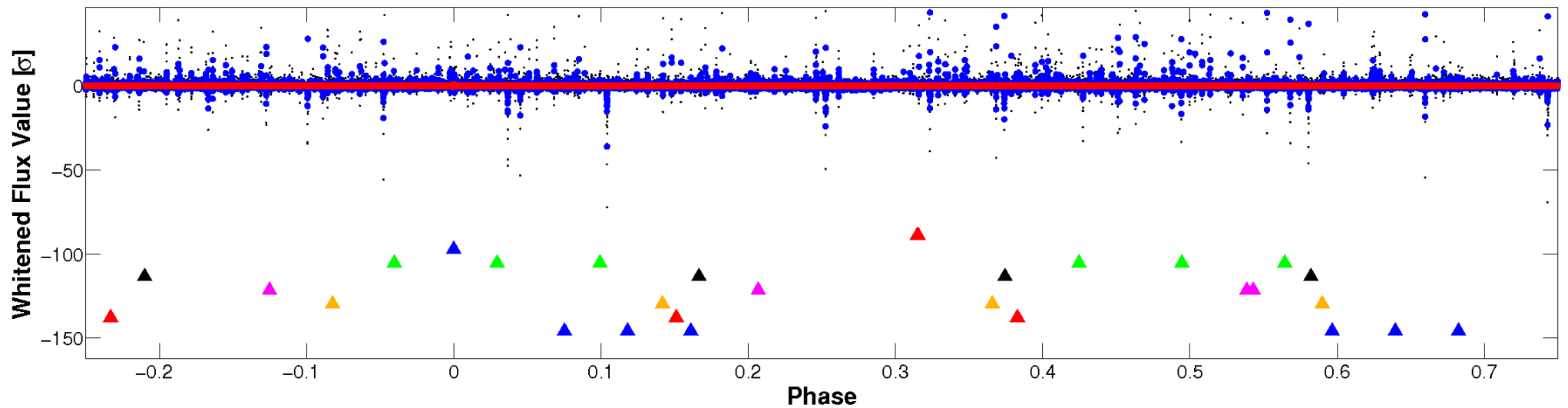


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

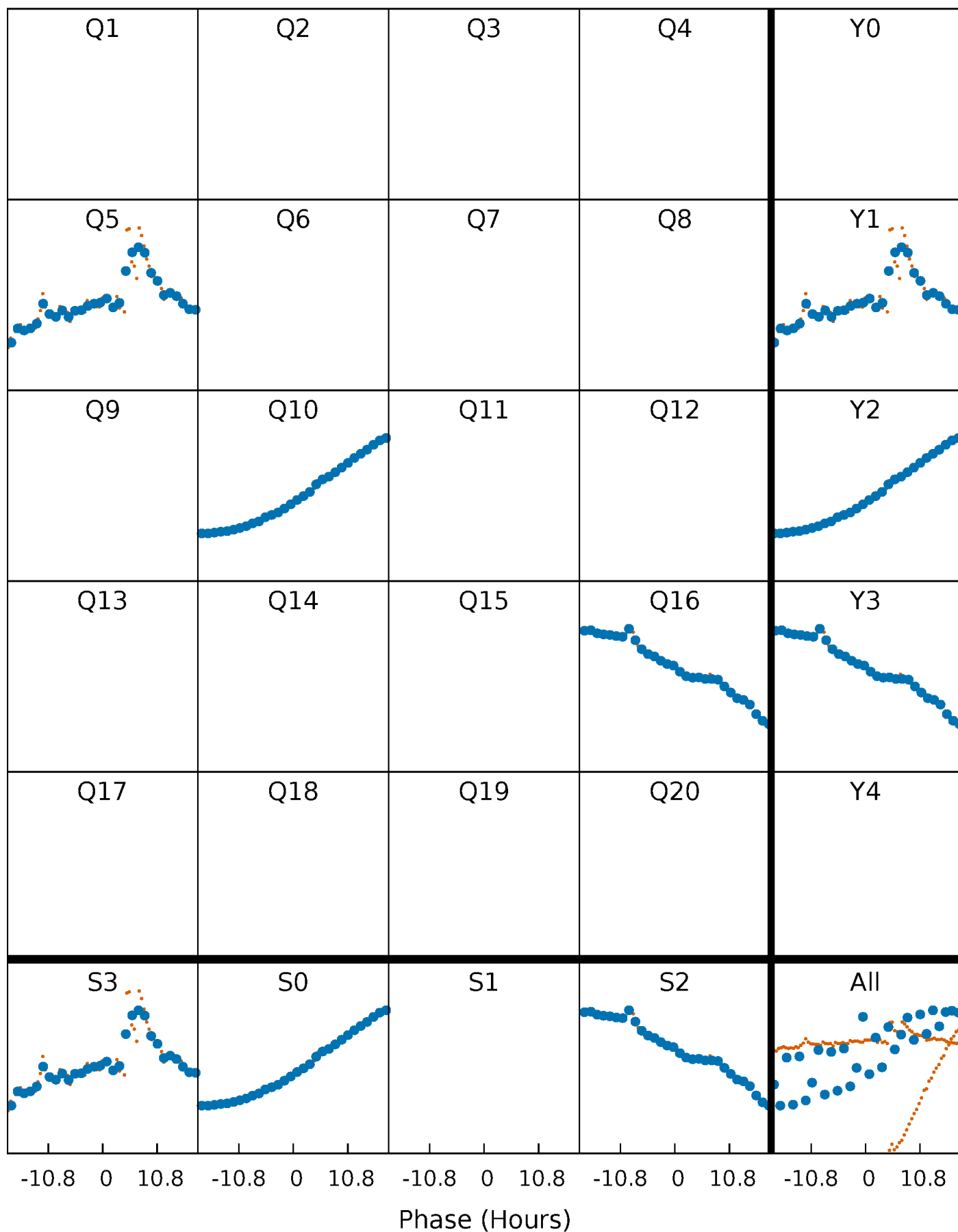


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 009346592-02 P=504.919794 Days $T_0=483.729108$ (BKJD)



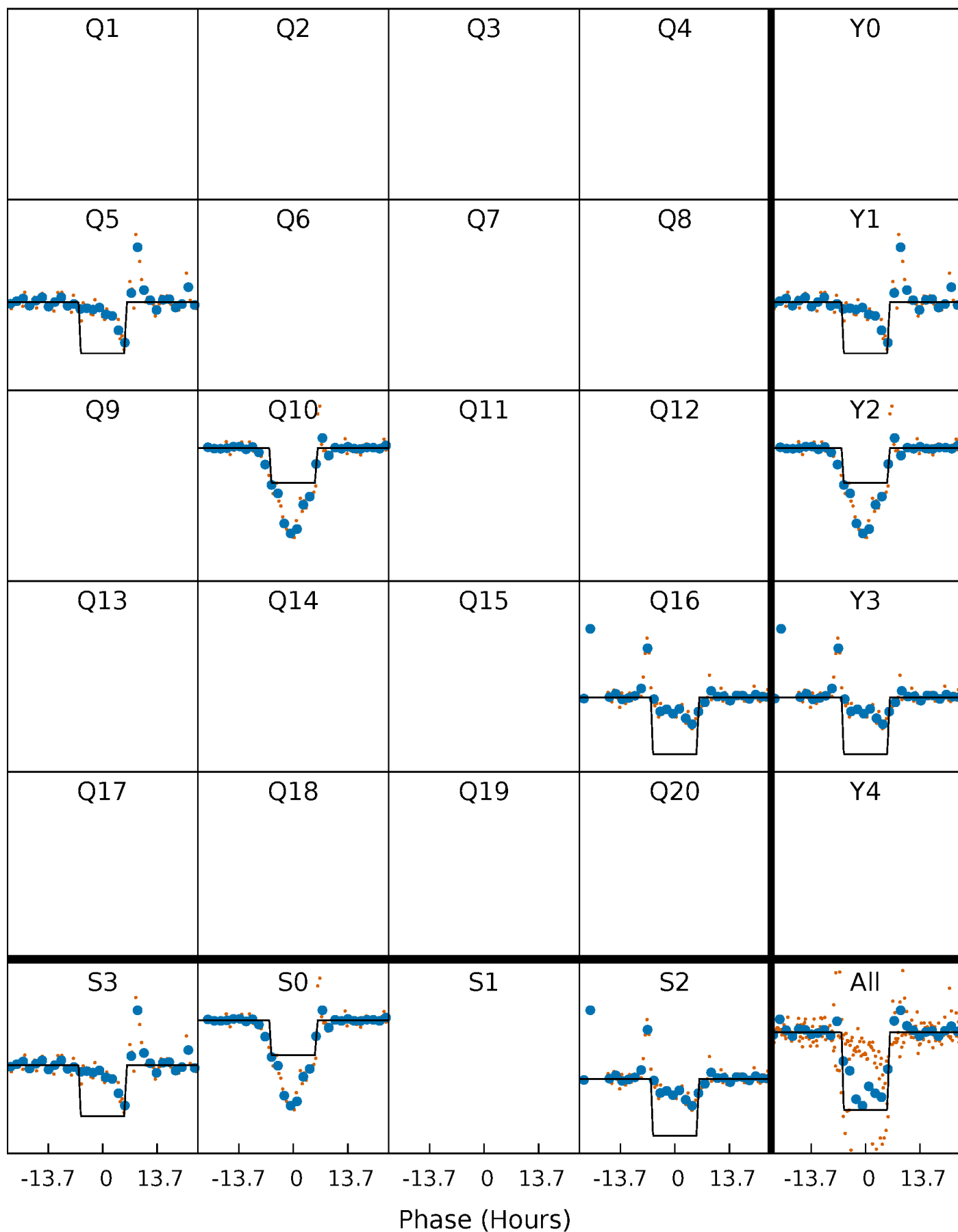
DV Quarter-Phased Transit Curves

TCE 009346592-02 $P=504.919794$ Days $T_0=483.729108$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

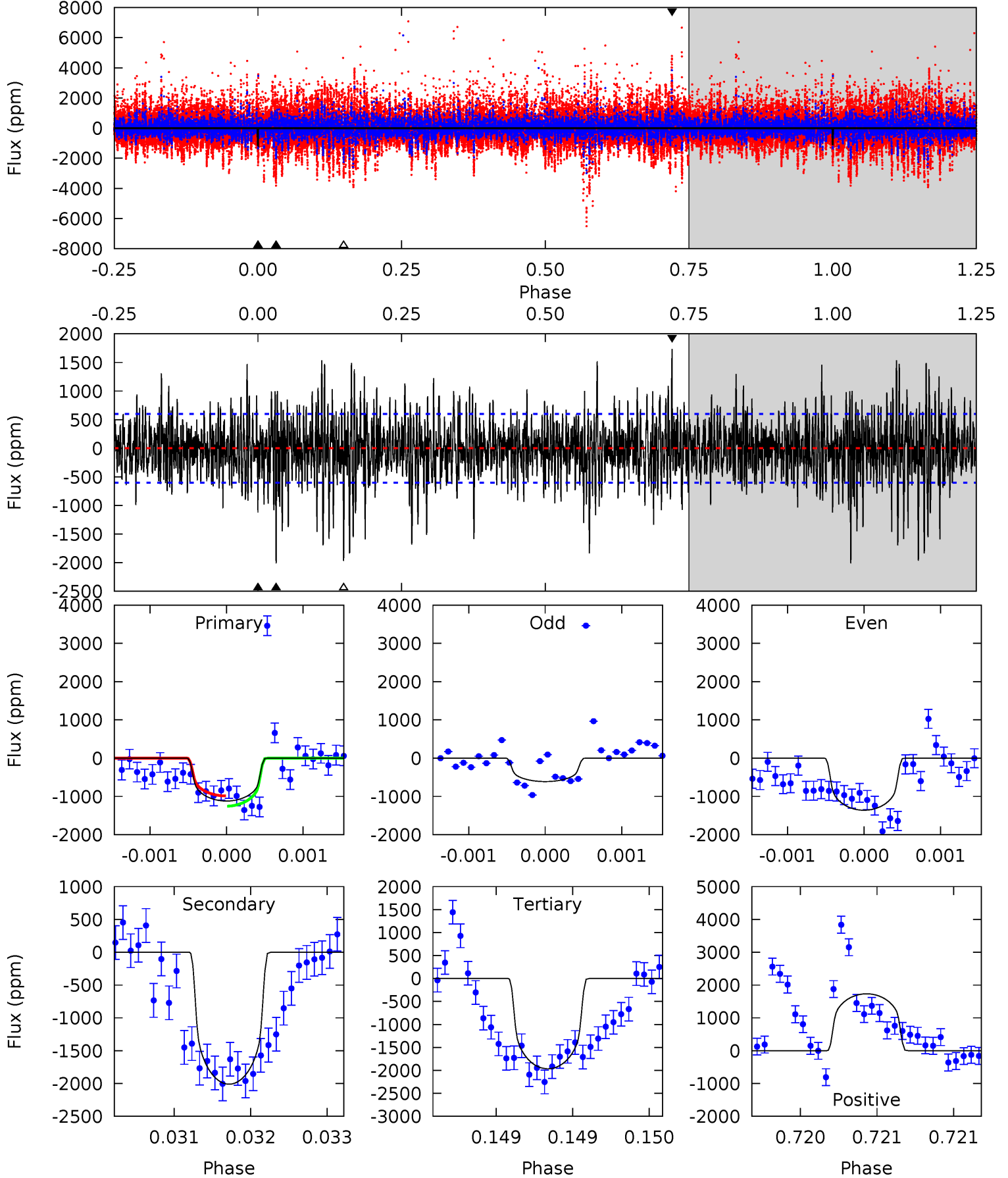
TCE 009346592-02 $P=504.906456$ Days $T_0=483.683064$ (BKJD)



DV Model-Shift Uniqueness Test

009346592-02, P = 504.919794 Days, E = 483.729108 Days

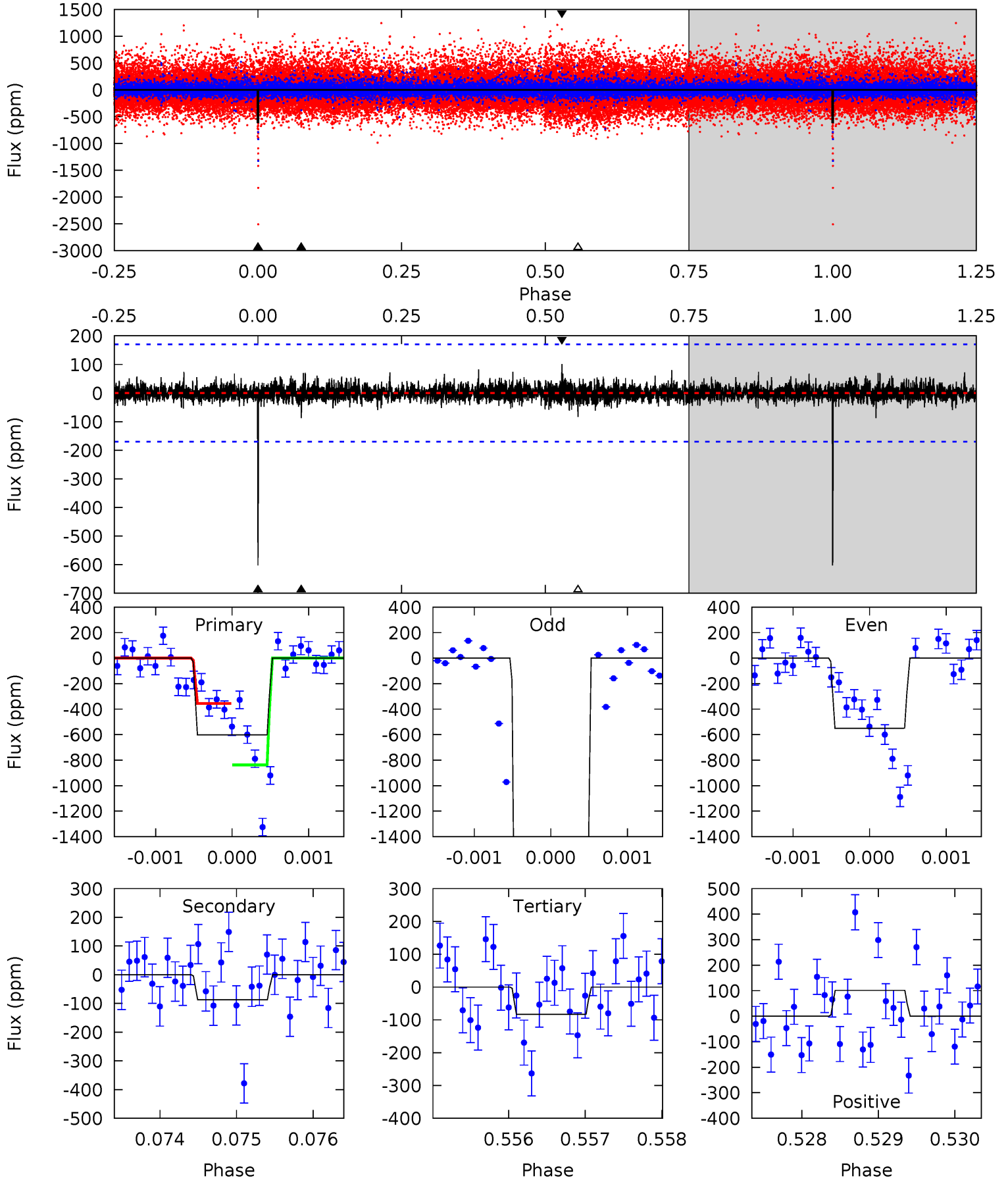
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	18.4	18.0	15.8	5.49	3.35	4.00	-7.72	-5.59	0.41	2.54	2.54	0.92	0.46	1.23



Alt Model-Shift Uniqueness Test

009346592-02, P = 504.906456 Days, E = 483.683064 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	2.79	2.66	3.24	5.46	3.30	0.52	16.6	16.1	0.14	-0.45	43.5	2.73	0.14	7.78



Stellar Parameters For KIC 009346592

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4234^{+128}_{-128}	$4.619^{+0.053}_{-0.018}$	$0.020^{+0.250}_{-0.300}$	$0.650^{+0.036}_{-0.061}$	$0.640^{+0.056}_{-0.056}$	$3.283^{+0.769}_{-0.283}$
	+3%/-3%	+1%/-0%	+1250%/-1500%	+6%/-9%	+9%/-9%	+23%/-9%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009346592-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2010 ± 109	$2.07^{+0.63}_{-0.57}$	202^{+7}_{-7}	4998^{+858}_{-495}	$296890^{+270873}_{-118041}$
Alt.	-87 ± 31	$3.13^{+0.52}_{-0.63}$	201^{+7}_{-7}	2622^{+199}_{-176}	5569^{+4090}_{-2379}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

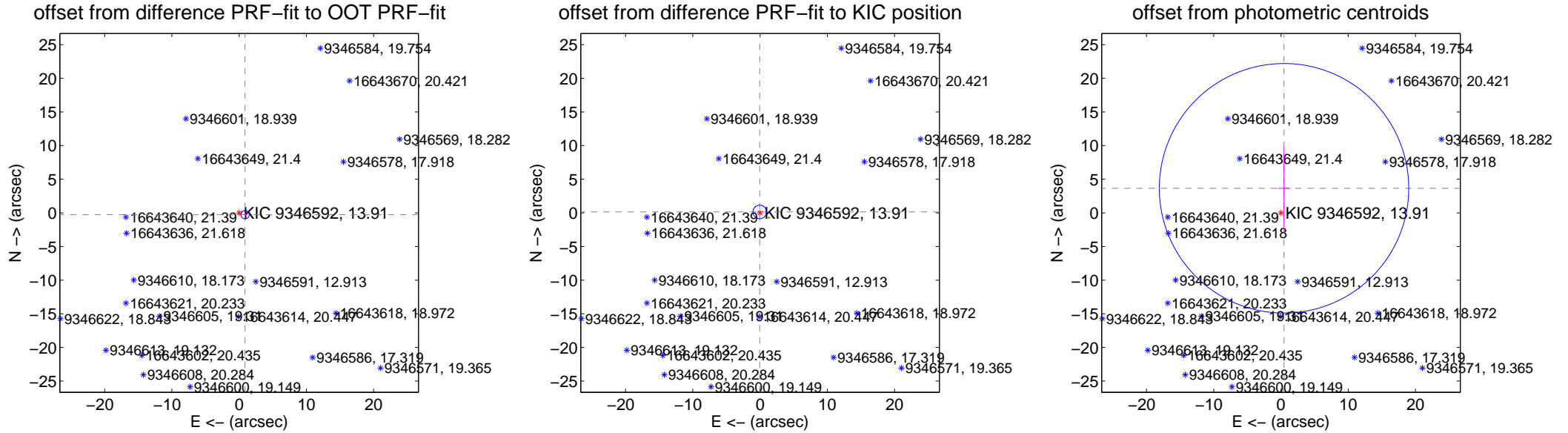
DV Centroid Data

Supplemental centroid analysis for 009346592-02. Kepler magnitude: 13.91. Transit SNR 4.66

There are 1 quarters with good PRF difference image offsets

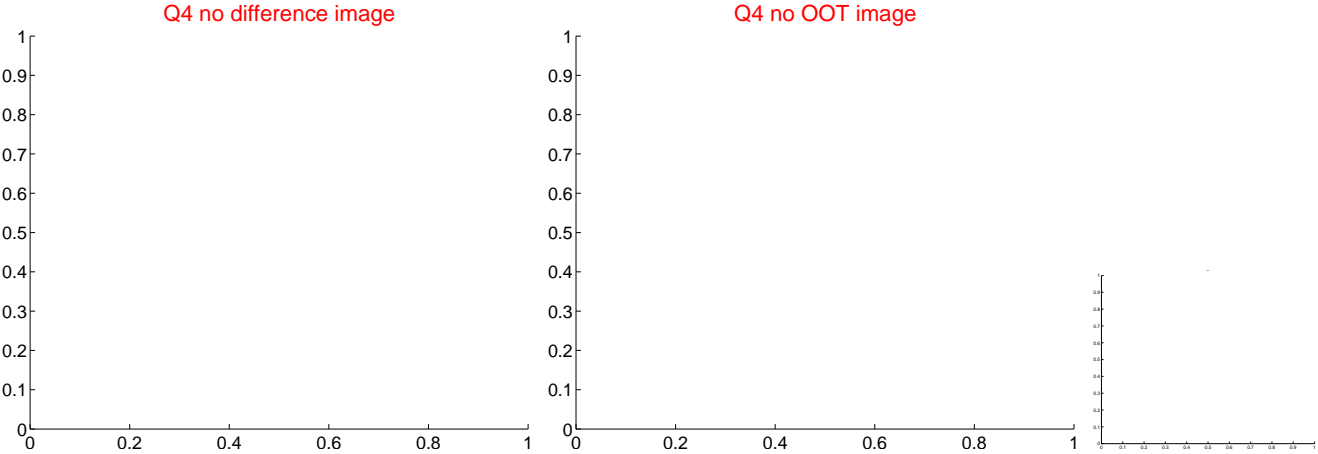
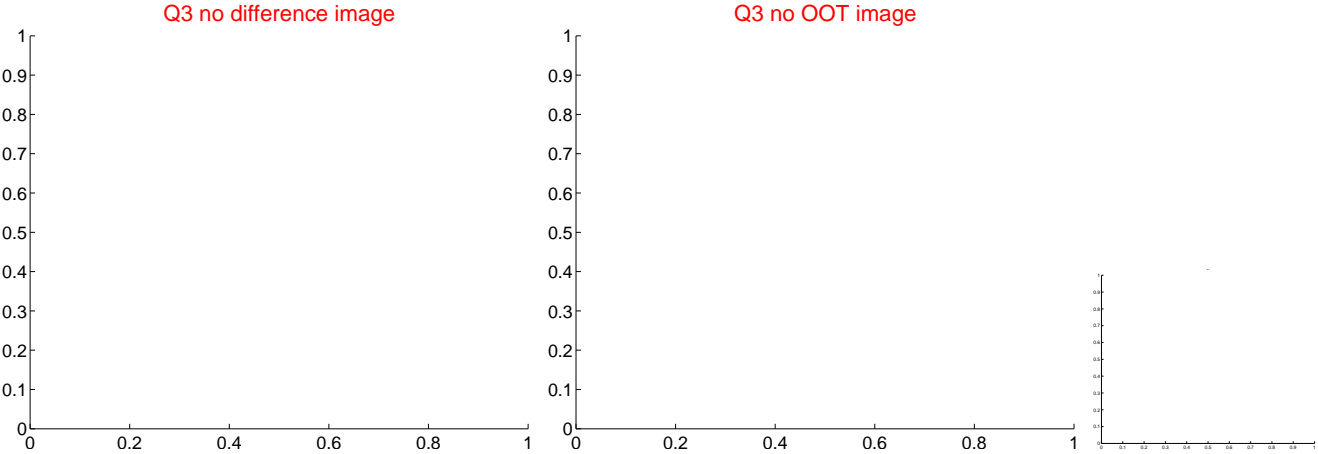
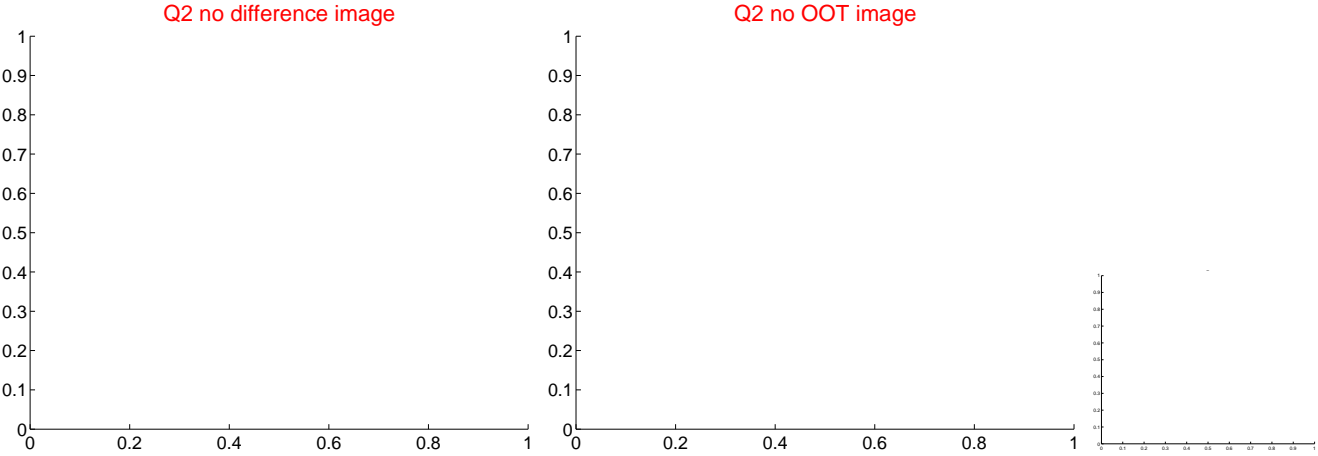
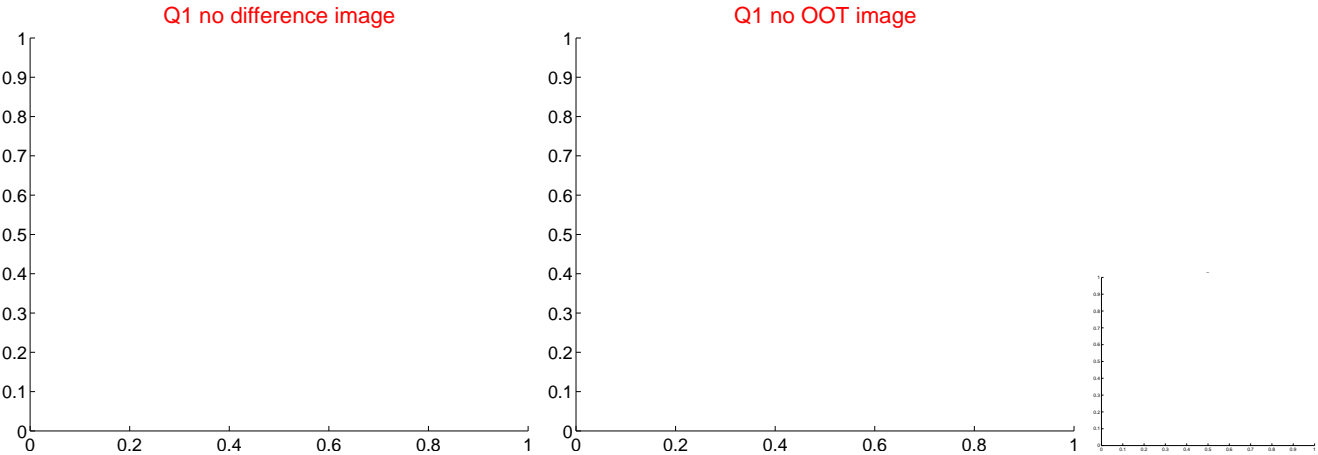
The direct PRF centroid is offset from the target star catalog position by about 0.62 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.923 \pm 0.204	4.52	-0.881 \pm 0.204	-0.274 \pm 0.200
PRF-fit source offset from KIC position	0.155 \pm 0.335	0.46	0.053 \pm 0.361	0.145 \pm 0.229
photometric centroid source offset	3.68 \pm 6.18	0.60	-0.45 \pm 0.91	3.65 \pm 6.23

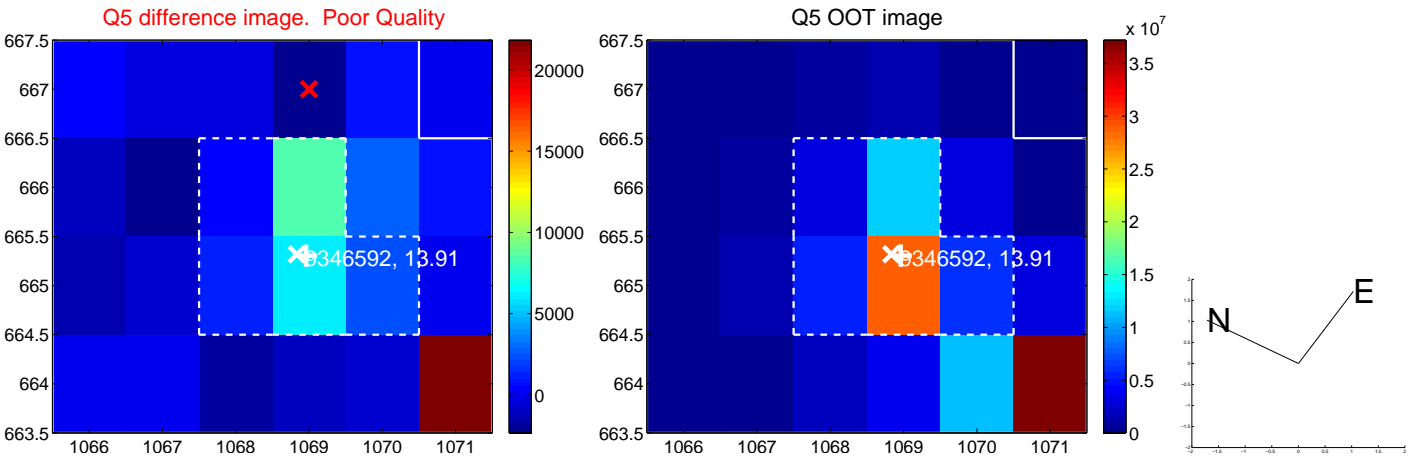


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

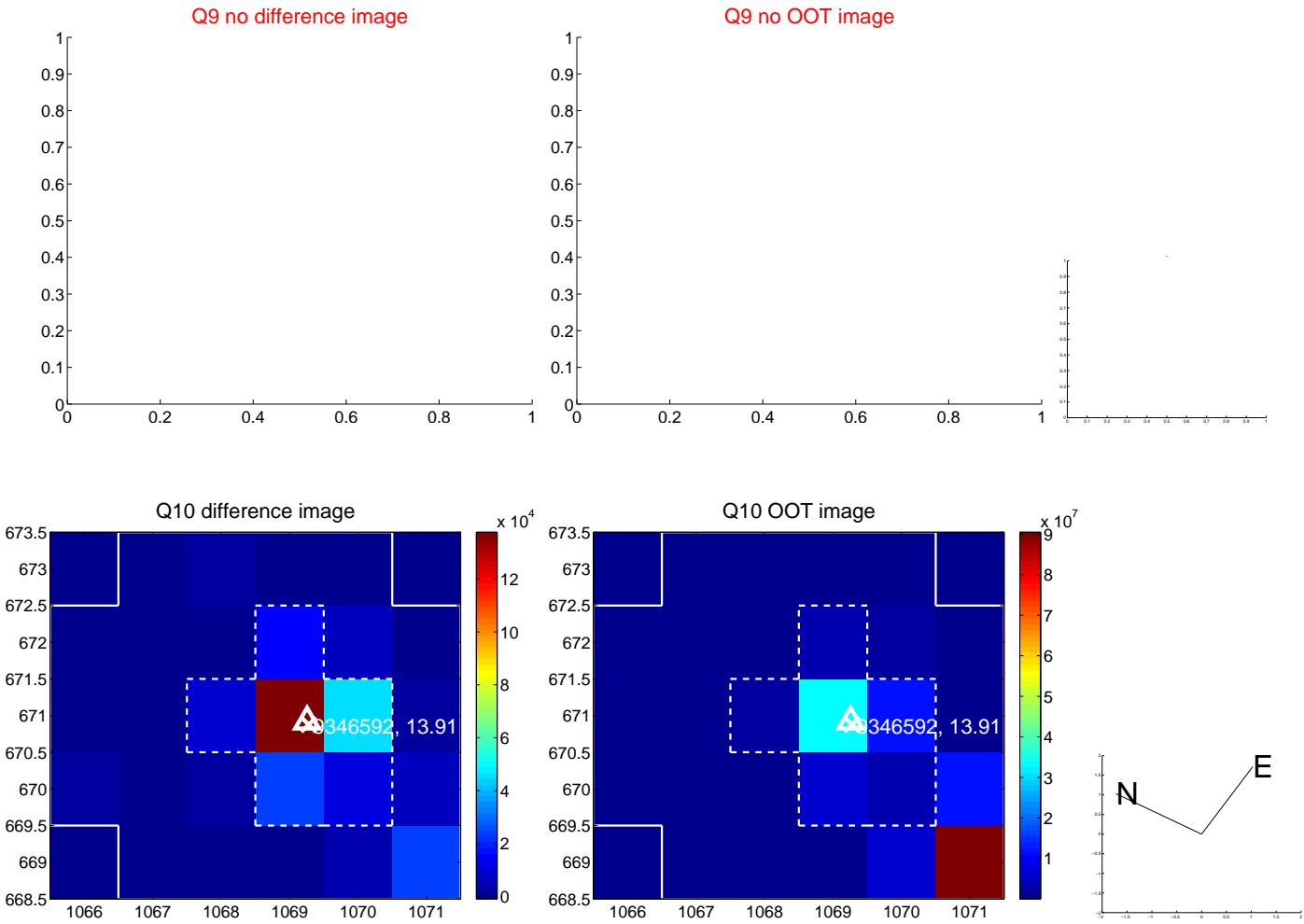
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



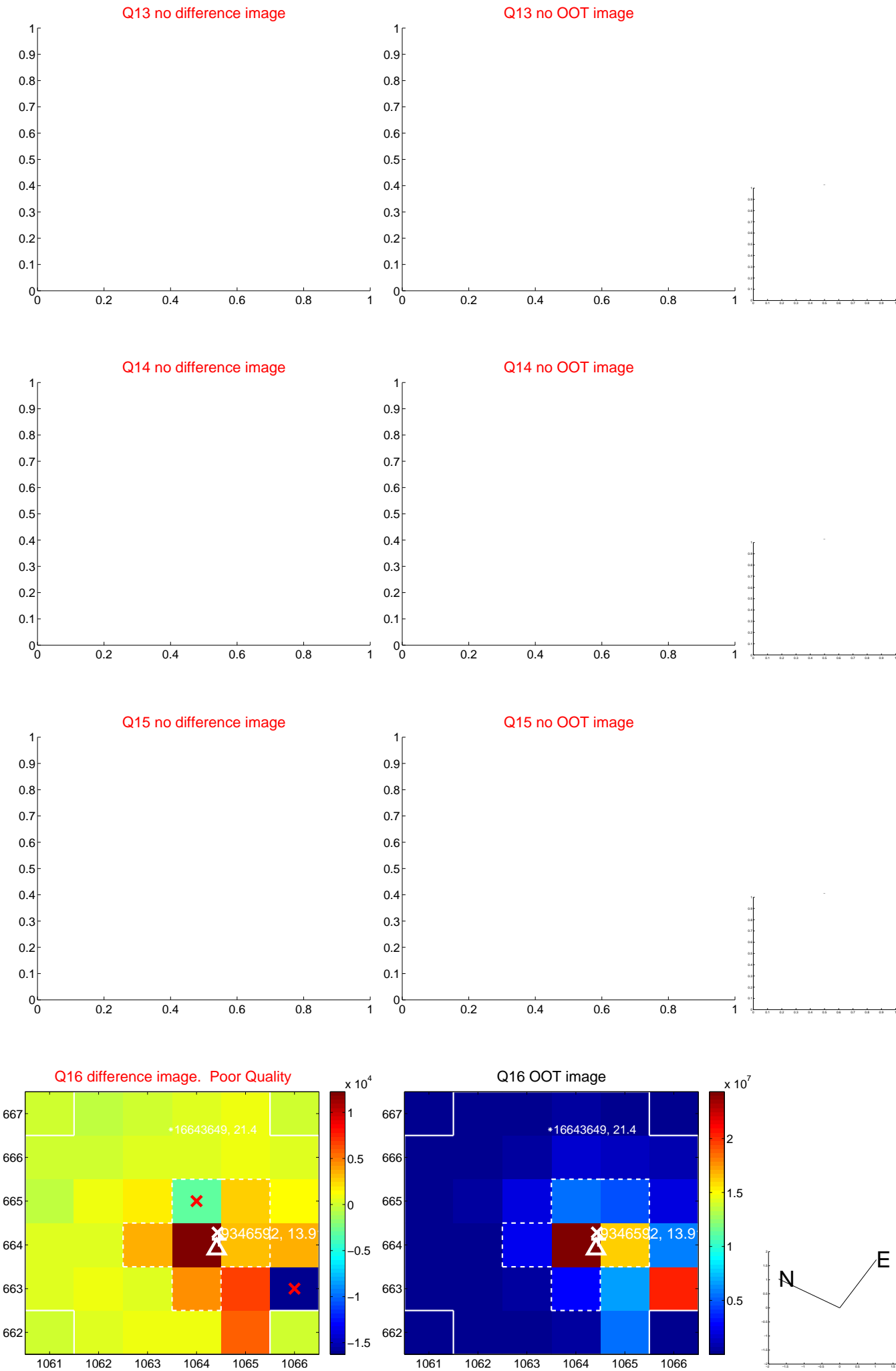
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



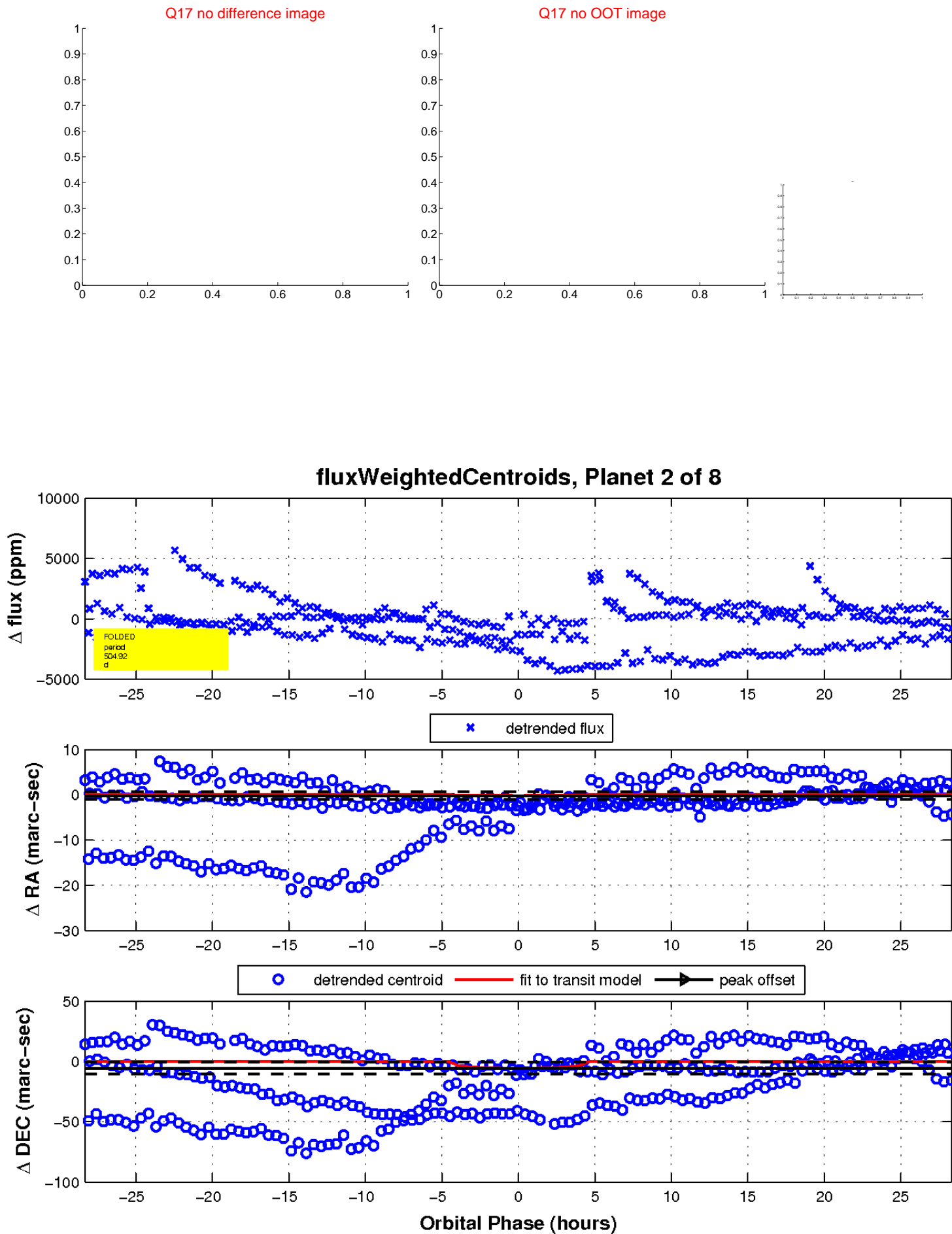
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

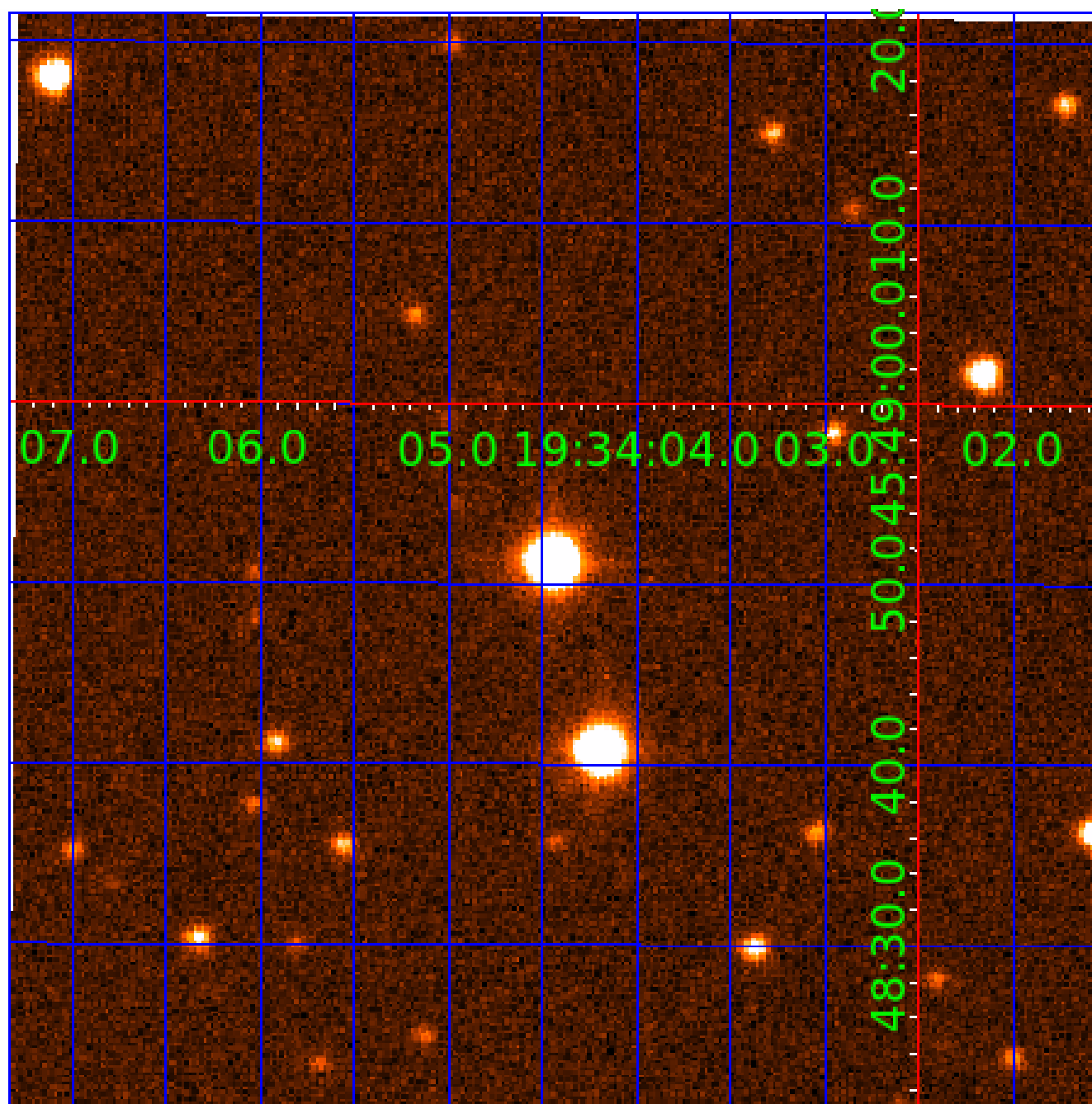


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009346592

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
009346592-01	OBS	No	504.746735	138.109841	1012.8	4.708	15.4	6.5	0.65	4234	2.03	0.11
009346592-02	OBS	No	504.919794	483.729108	807.2	9.458	15.5	4.7	0.65	4234	2.10	0.11
009346592-03	OBS	No	270.092408	193.258862	925.8	2.243	14.3	7.8	0.65	4234	2.37	0.24
009346592-04	OBS	No	399.981133	377.728840	639.9	3.920	13.7	5.3	0.65	4234	1.87	0.14
009346592-05	OBS	No	337.335446	250.824416	705.3	3.057	13.7	6.4	0.65	4234	1.90	0.18
009346592-06	OBS	No	391.787932	276.655756	742.4	9.022	12.7	4.8	0.65	4234	1.78	0.15
009346592-07	OBS	No	698.882333	172.118387	1119.5	7.401	13.9	7.3	0.65	4234	2.25	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009346592-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009346592-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS
009346592-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
009346592-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009346592-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009346592-06	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009346592-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

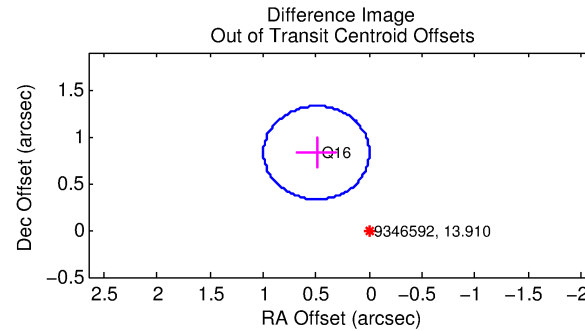
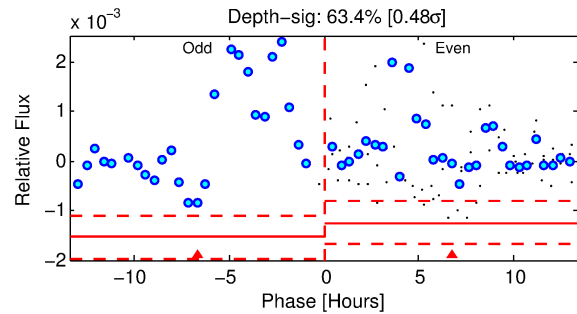
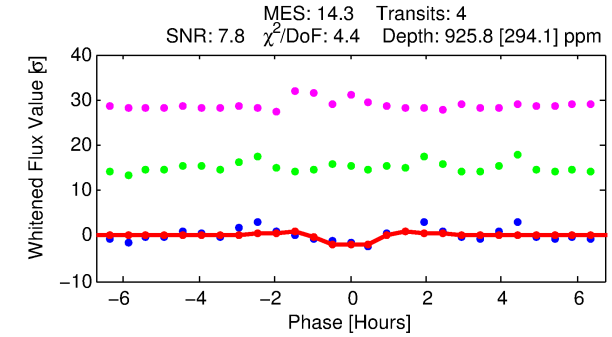
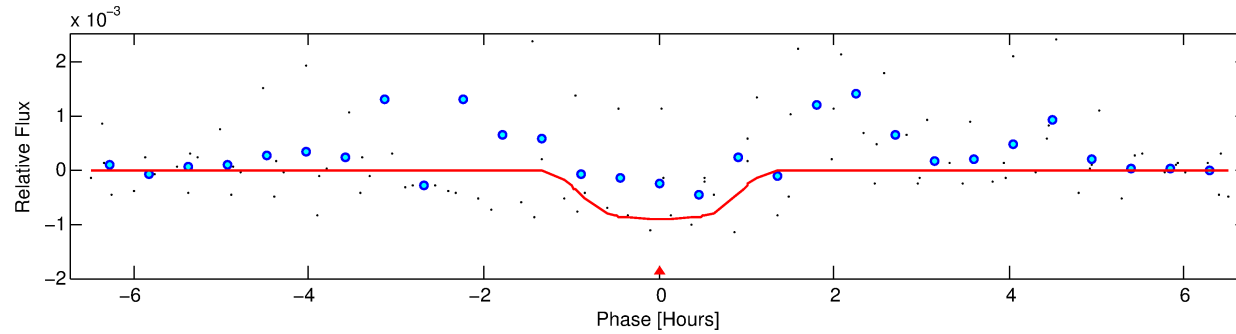
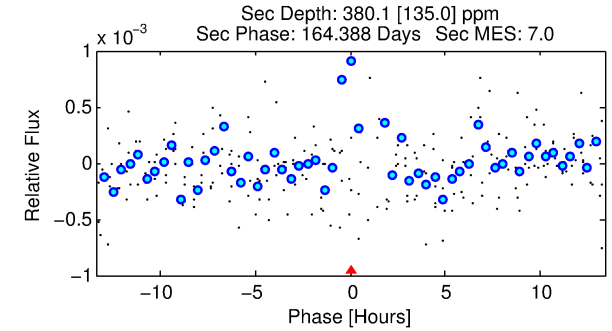
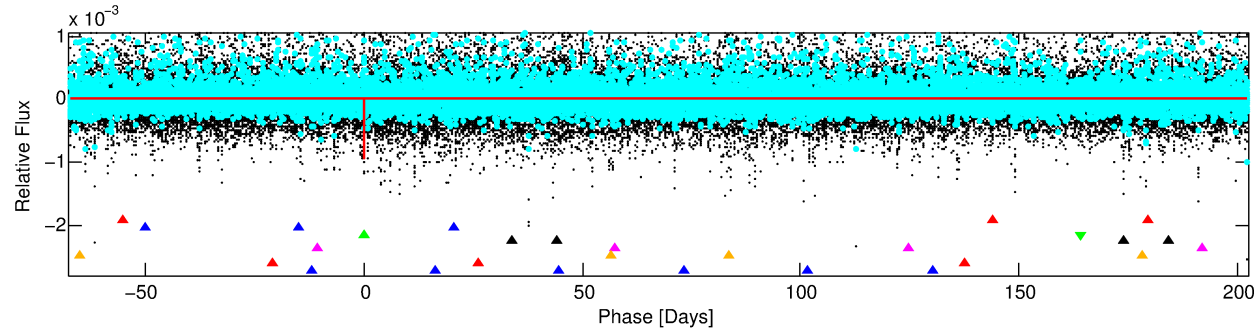
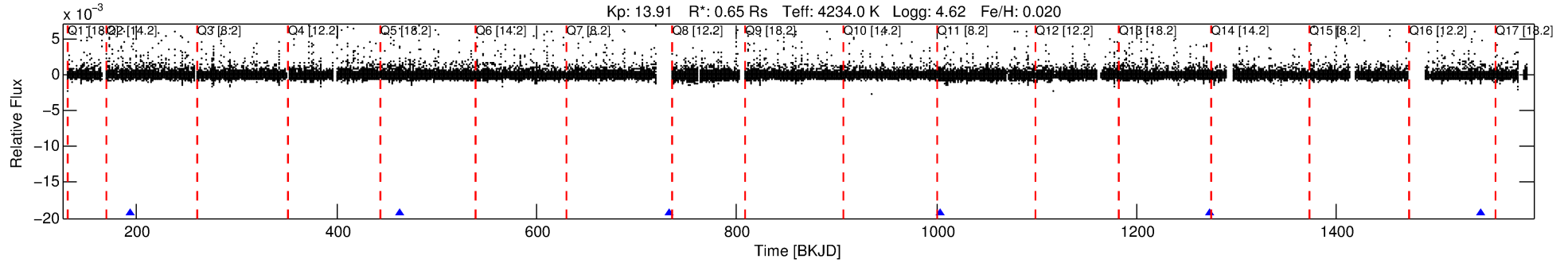
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009346592-03

No Significant Match Found

DV One-Page Summary

KIC: 9346592 Candidate: 3 of 8 Period: 270.092 d



DV Fit Results:

Period = 270.09241 [0.00308] d
Epoch = 193.2589 [0.0094] BKJD
Rp/R* = 0.0334 [0.1388]
a/R* = 508.78 [7513.51]
b = 0.87 [4.18]
Seff = 0.24 [0.04]
Teq = 179 [7] K
Rp = 2.37 [9.85] Re
a = 0.7052 [0.0526] AU
Ag = 18573.31 [154762.63] [0.12 σ]
Teffp = 3237 [6743] K [0.45 σ]

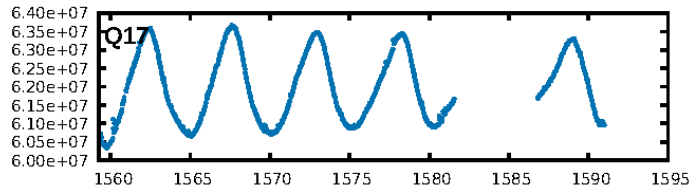
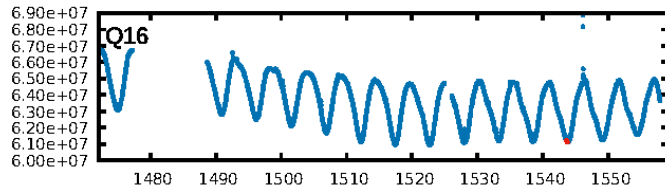
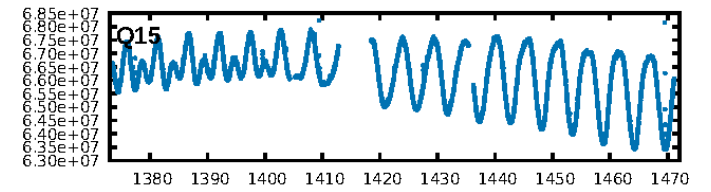
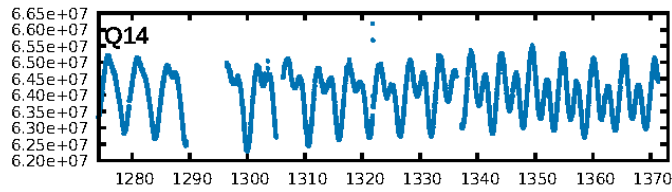
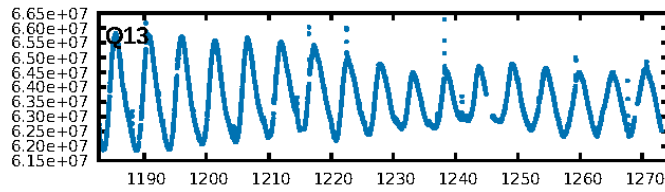
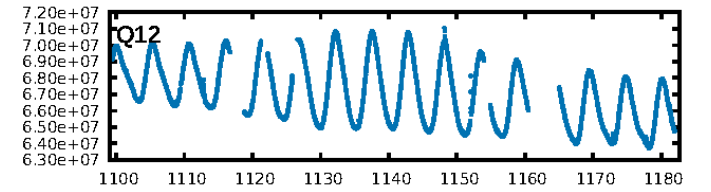
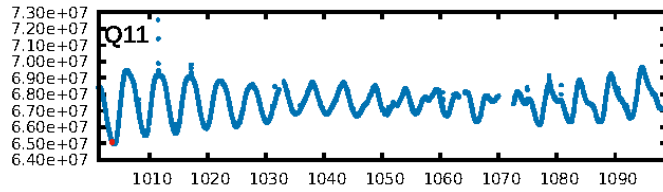
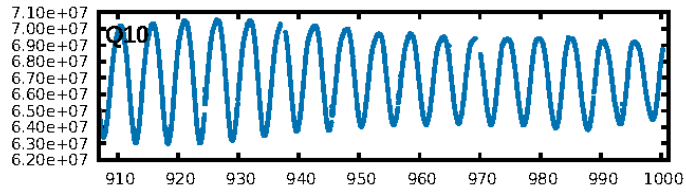
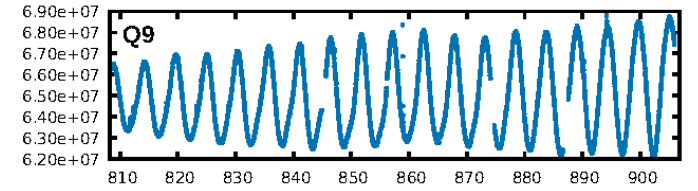
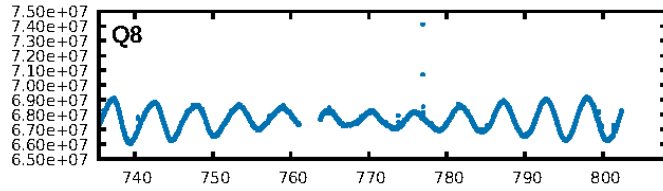
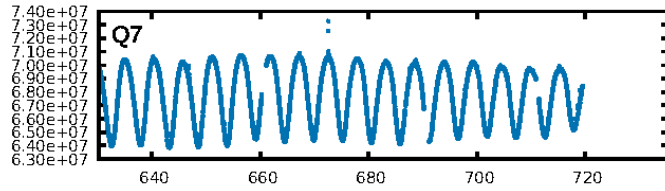
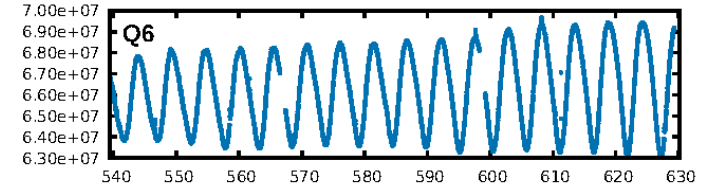
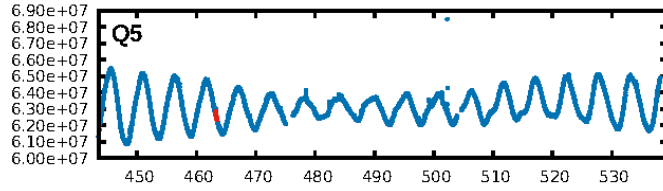
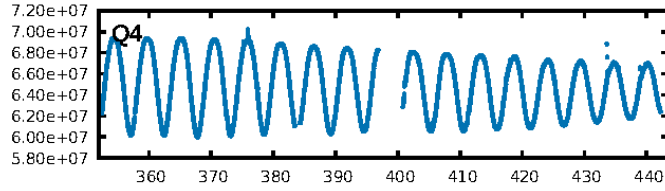
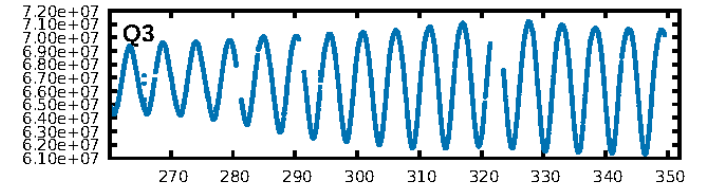
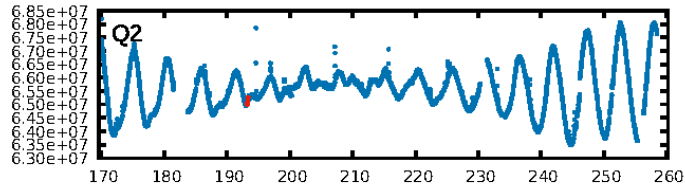
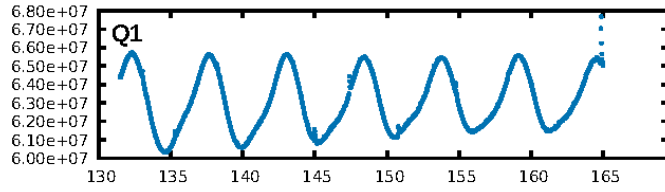
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [182.38 σ]
LongPeriod-sig: 100.0% [425.66 σ]
ModelChiSquare2-sig: 0.9%
ModelChiSquareGof-sig: 1.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.639
Centroid-sig: 54.9%
Centroid-so: 4.248 arcsec [1.76 σ]
OotOffset-rm: 0.965 arcsec [5.81 σ]
KicOffset-rm: 0.499 arcsec [3.79 σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [4/4]

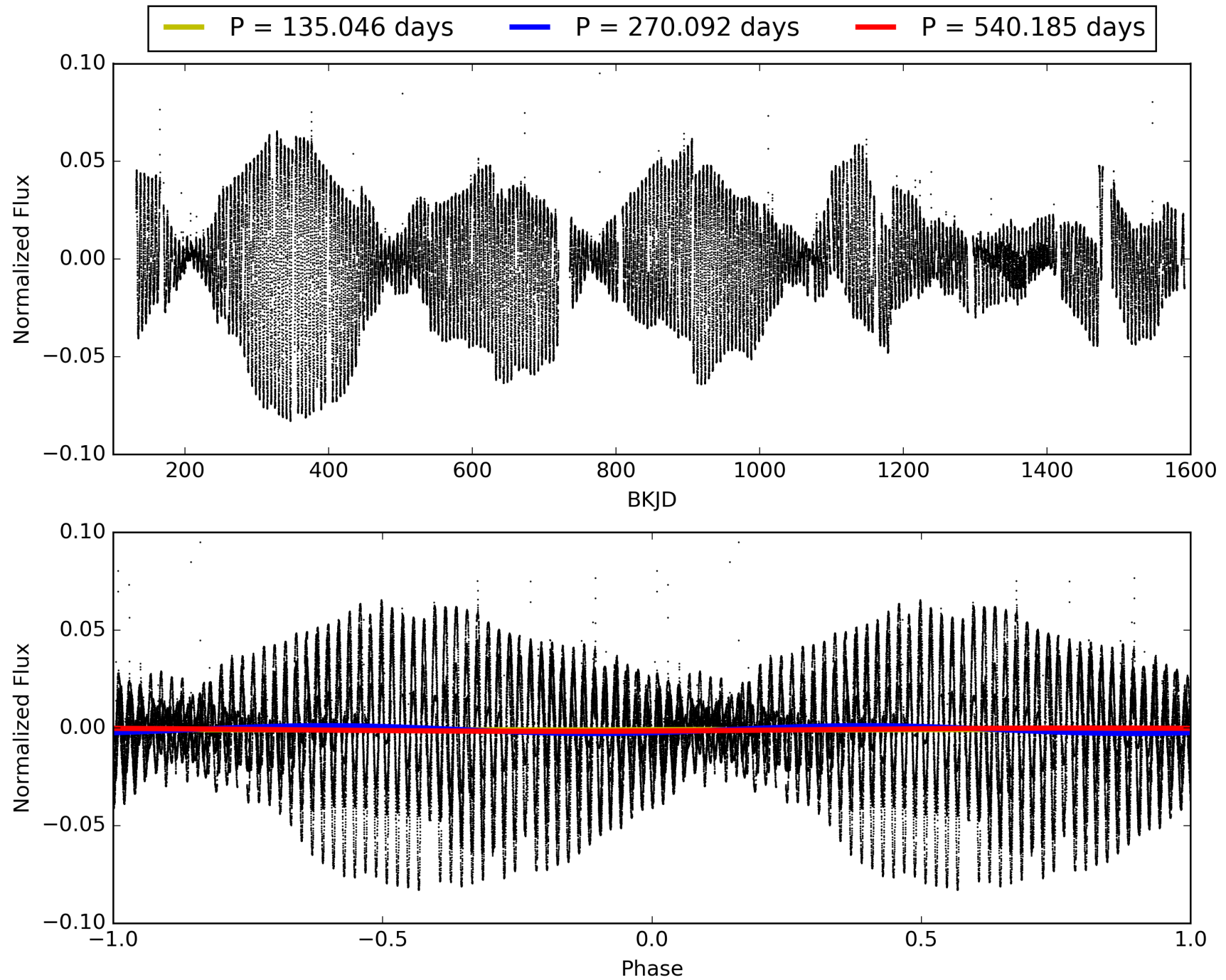
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:26:41 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009346592-03, PDC Light Curves

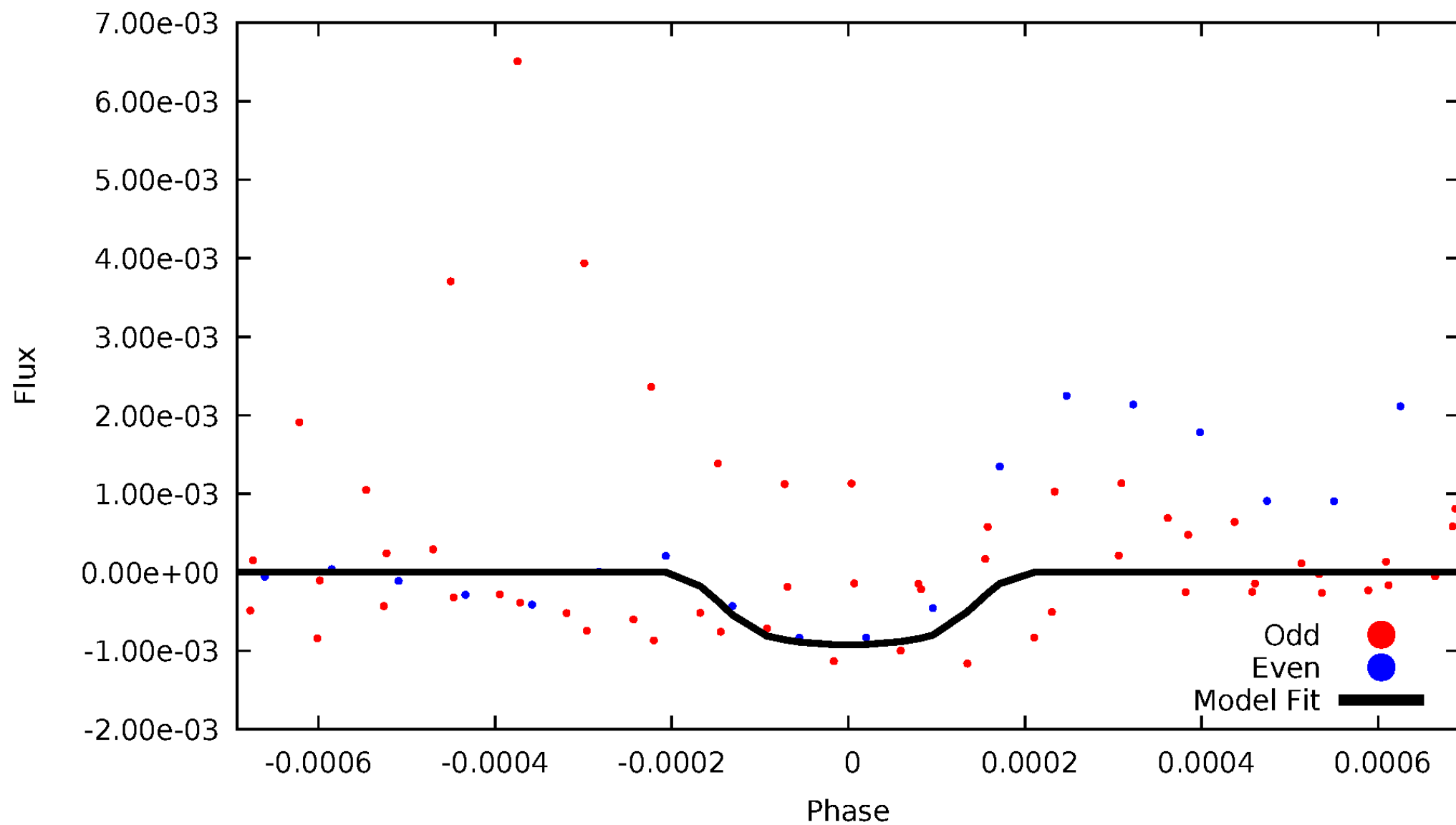


TCE 009346592-03



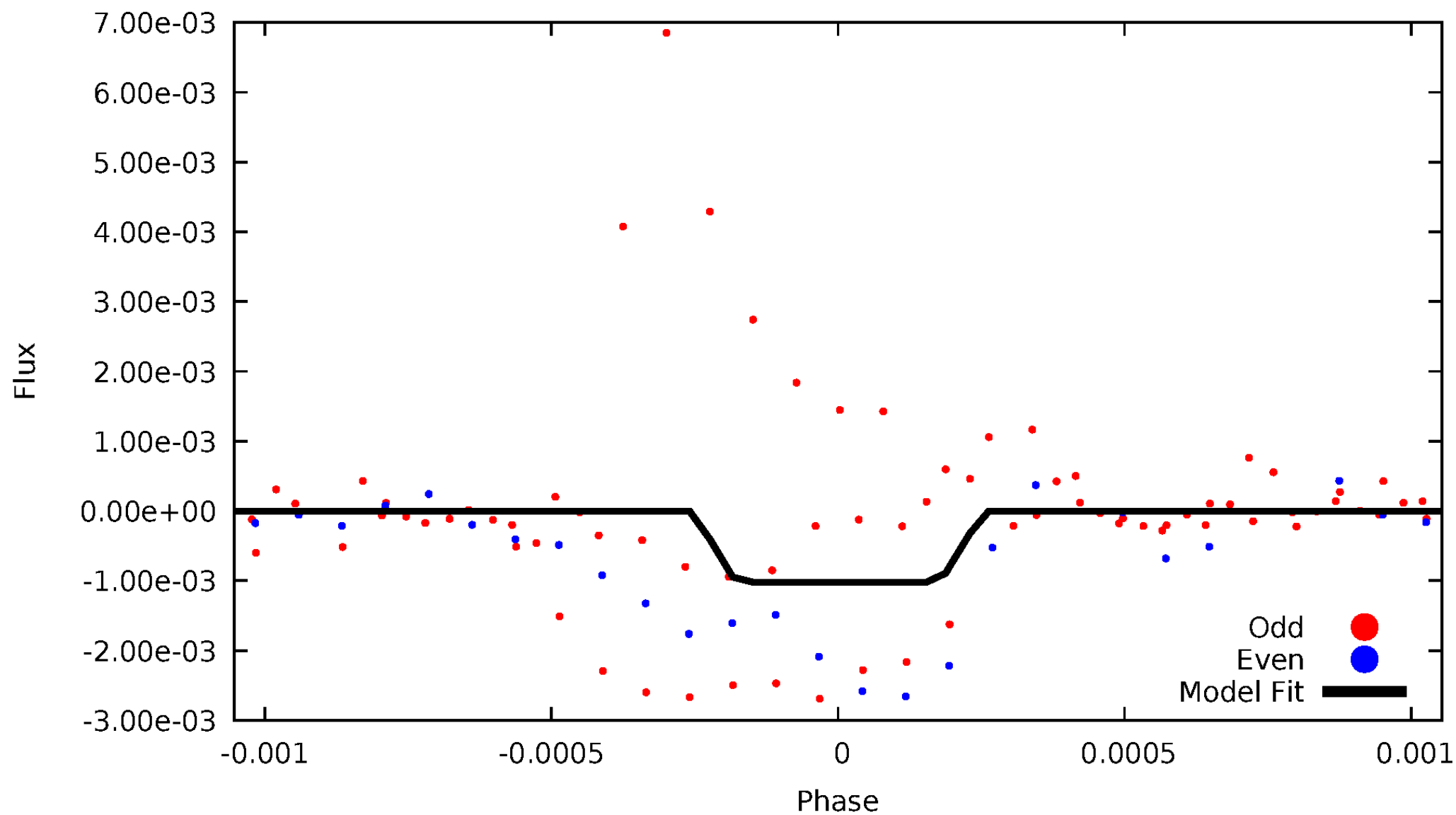
DV Odd/Even

TCE 009346592-03



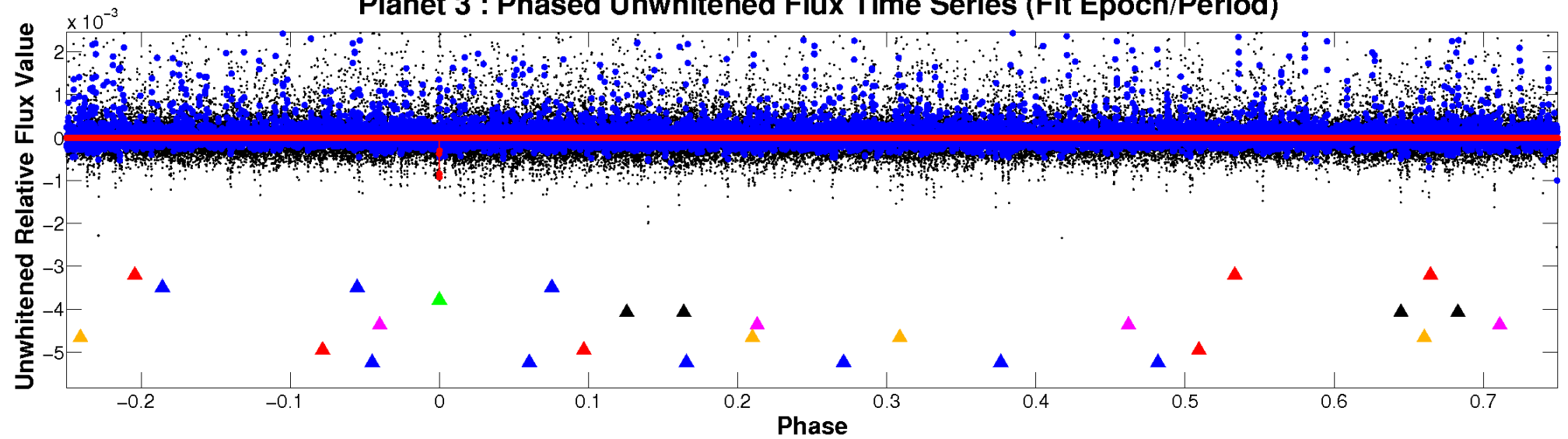
ALT Odd/Even

TCE 009346592-03

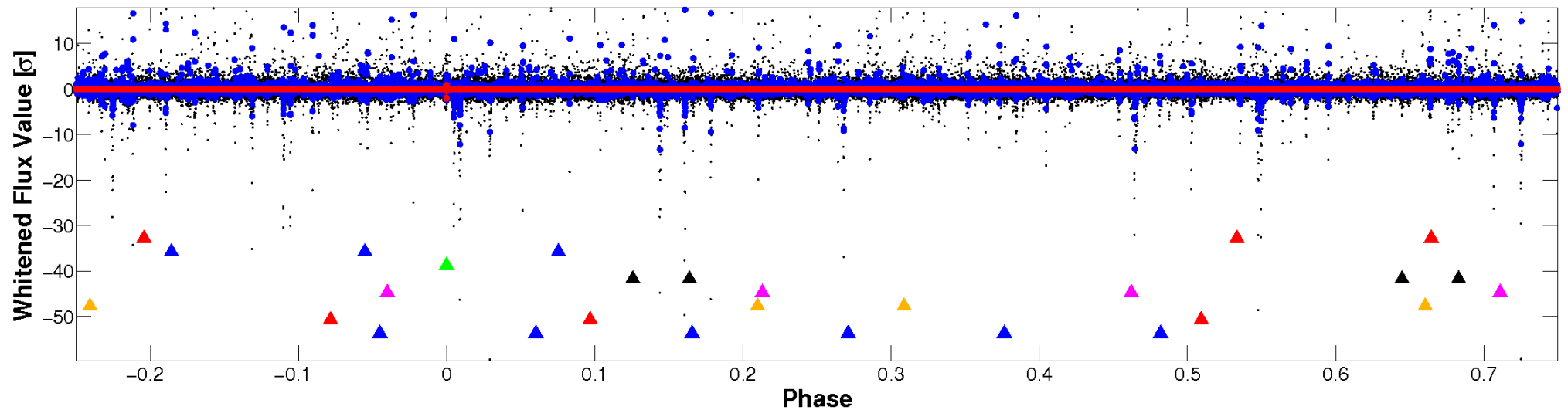


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

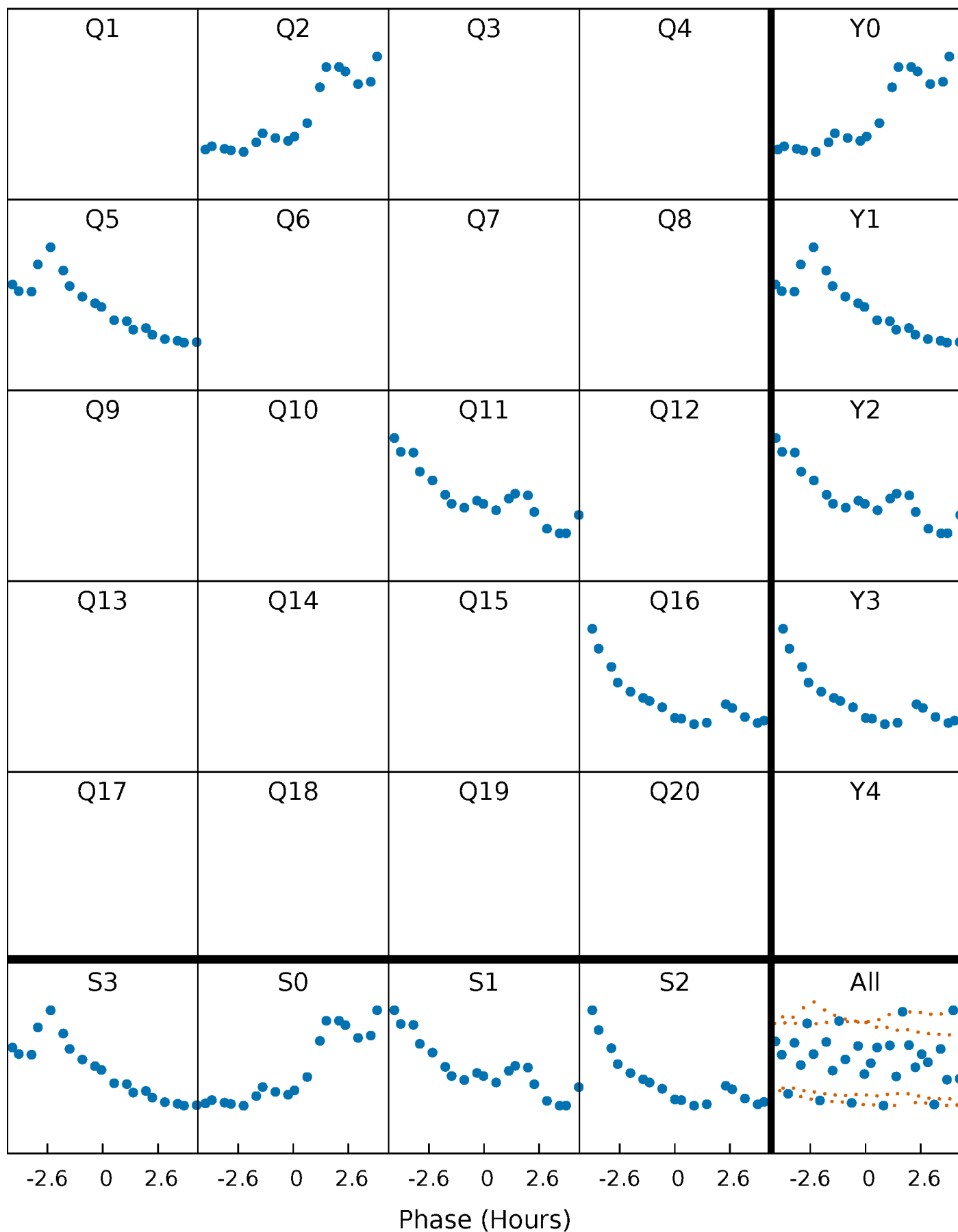


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



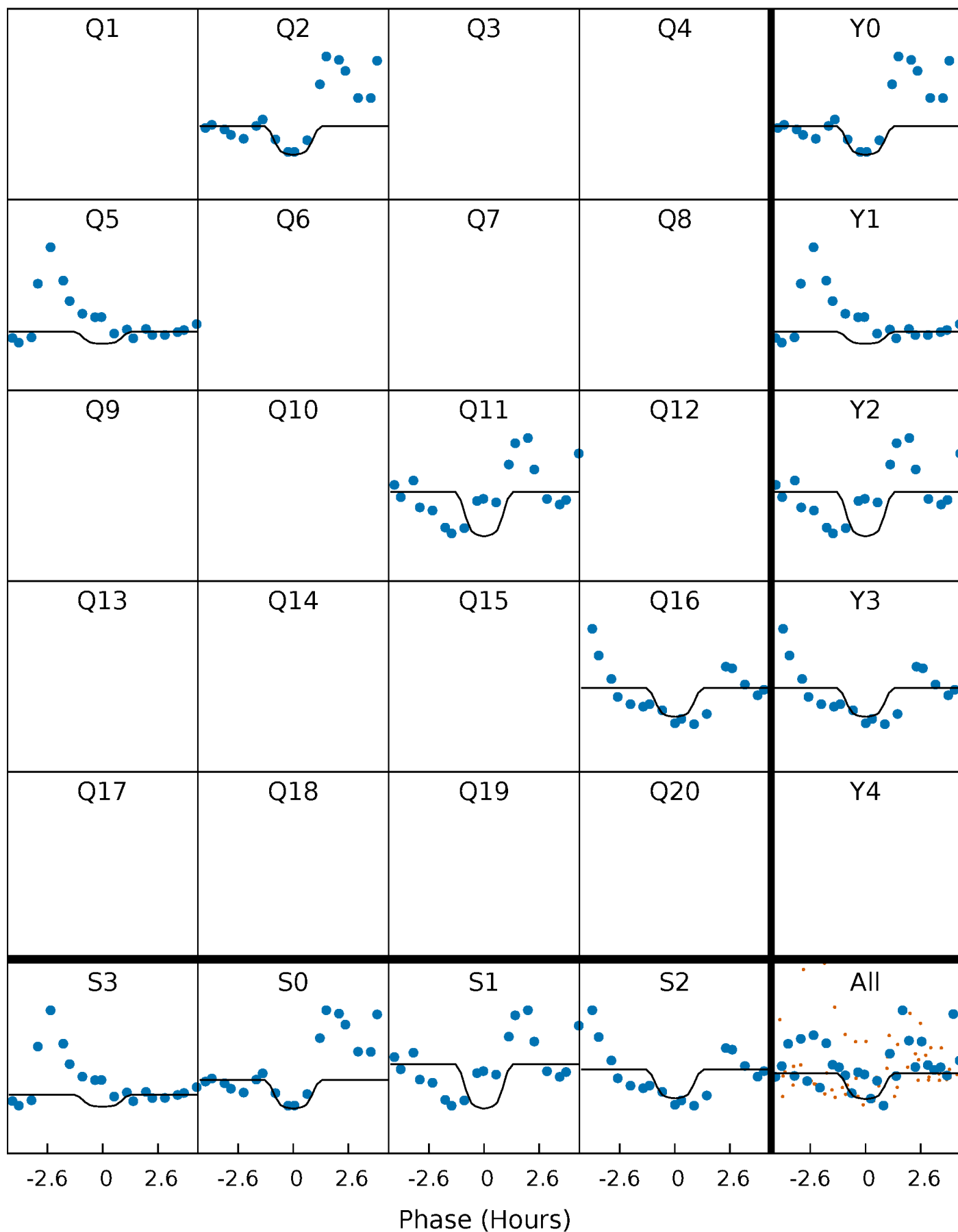
PDC Quarter-Phased Transit Curves

TCE 009346592-03 $P=270.092407$ Days $T_0=193.258862$ (BKJD)



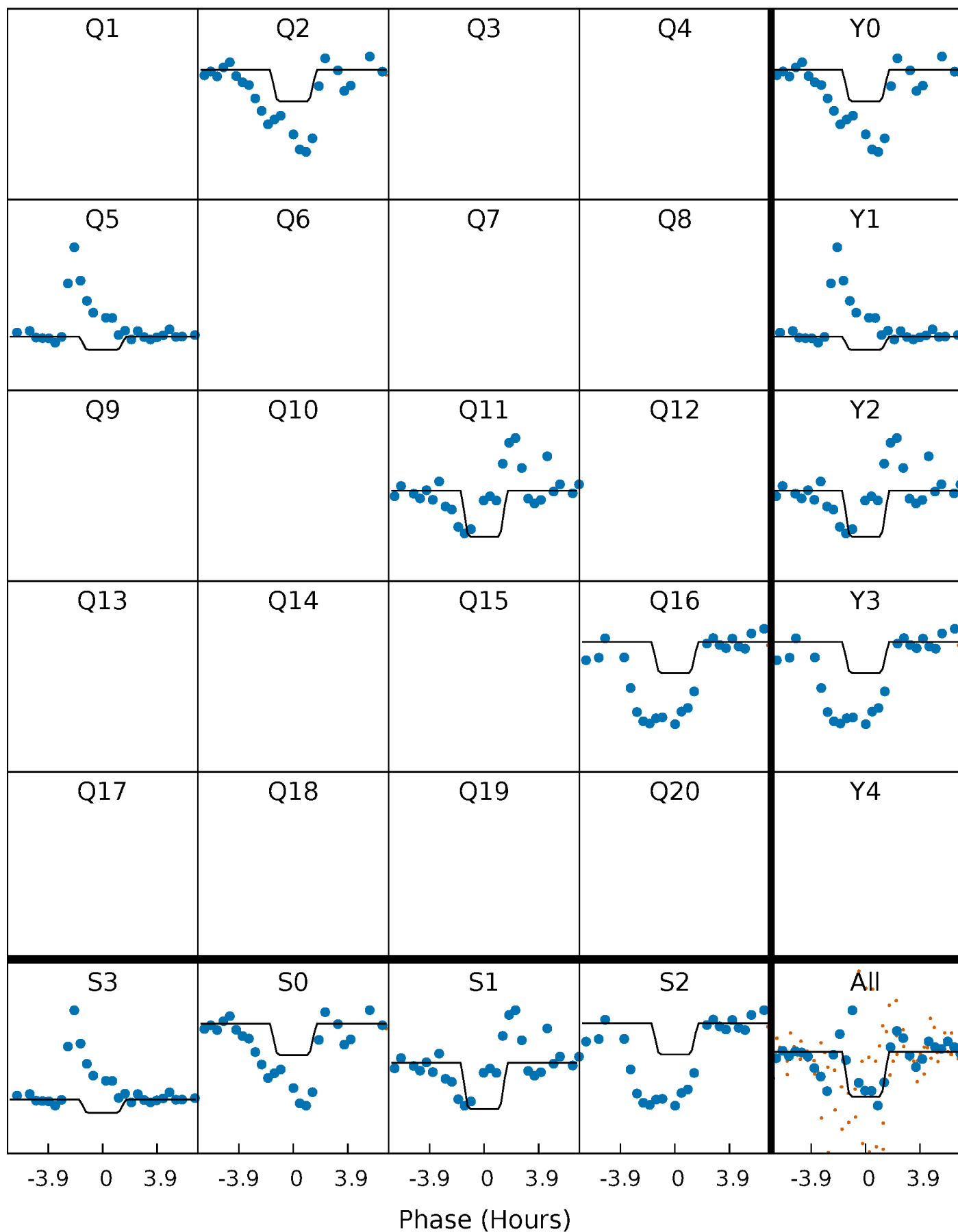
DV Quarter-Phased Transit Curves

TCE 009346592-03 $P=270.092407$ Days $T_0=193.258862$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

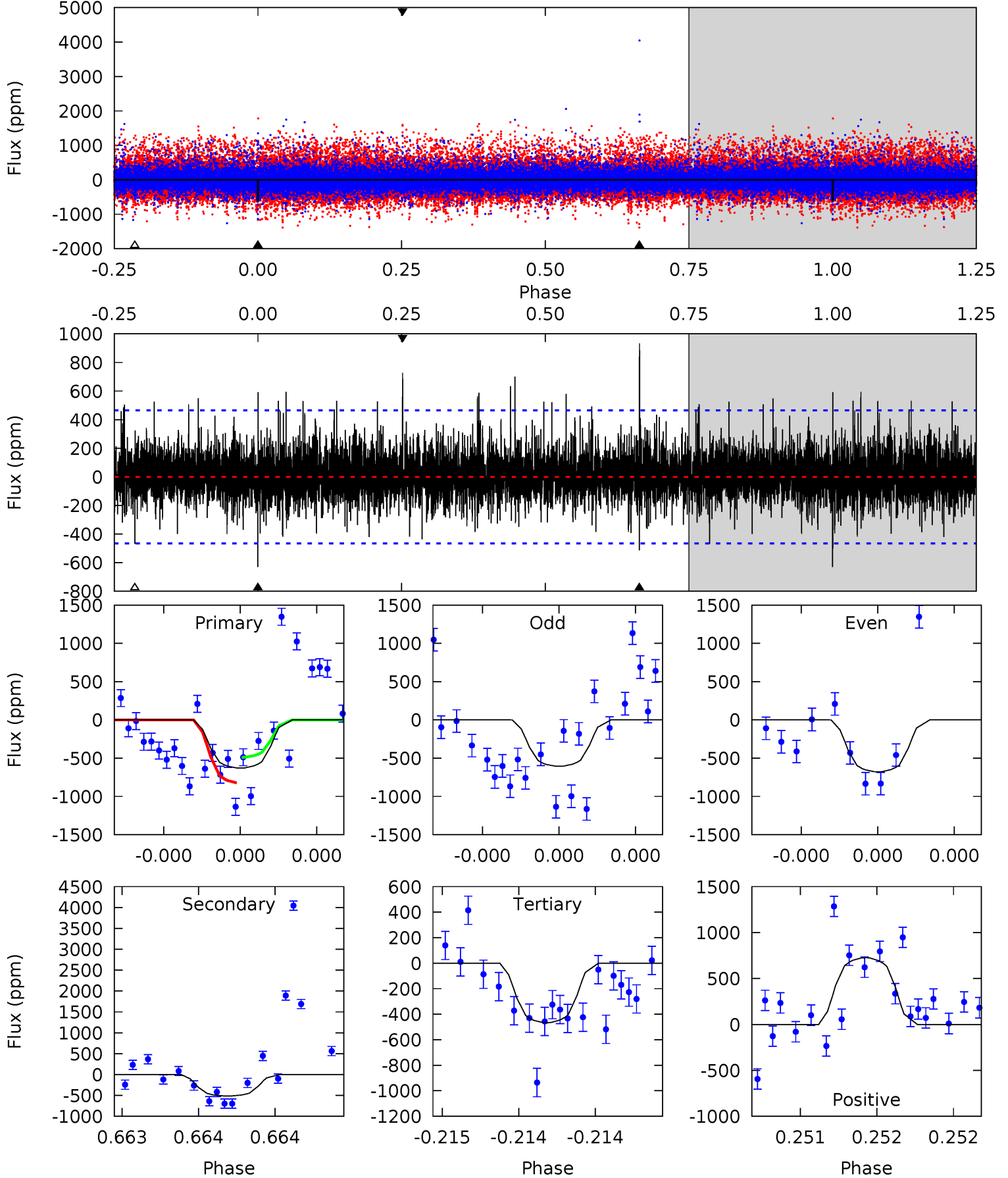
TCE 009346592-03 P=270.098550 Days $T_0=193.232404$ (BKJD)



DV Model-Shift Uniqueness Test

009346592-03, P = 270.092407 Days, E = 193.258862 Days

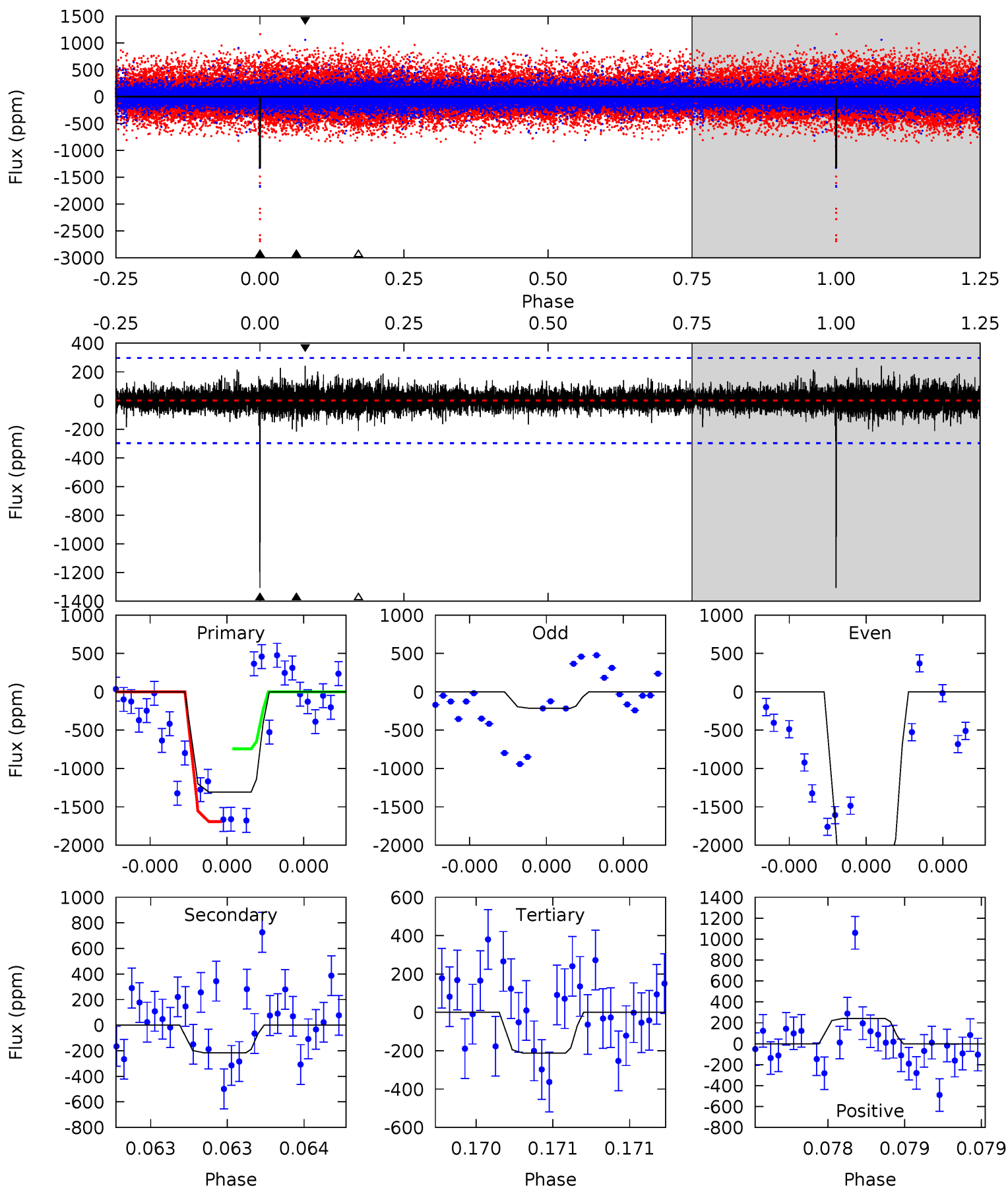
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.63	6.23	5.66	8.81	5.64	3.58	1.47	1.97	-1.18	0.57	-2.58	0.37	0.64	0.60	2.01



Alt Model-Shift Uniqueness Test

009346592-03, P = 270.098550 Days, E = 193.232404 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.5	4.05	3.99	4.54	5.58	3.49	0.81	20.5	20.0	0.06	-0.49	17.0	0.62	0.16	8.08



Stellar Parameters For KIC 009346592

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4234^{+128}_{-128}	$4.619^{+0.053}_{-0.018}$	$0.020^{+0.250}_{-0.300}$	$0.650^{+0.036}_{-0.061}$	$0.640^{+0.056}_{-0.056}$	$3.283^{+0.769}_{-0.283}$
	+3%/-3%	+1%/-0%	+1250%/-1500%	+6%/-9%	+9%/-9%	+23%/-9%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009346592-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-514 ± 82	$7.39^{+7.13}_{-5.11}$	249^{+8}_{-8}	2670^{+1104}_{-414}	2739^{+24718}_{-2083}
Alt.	-216 ± 53	$7.80^{+7.34}_{-5.45}$	249^{+9}_{-8}	2344^{+849}_{-305}	919^{+8752}_{-655}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

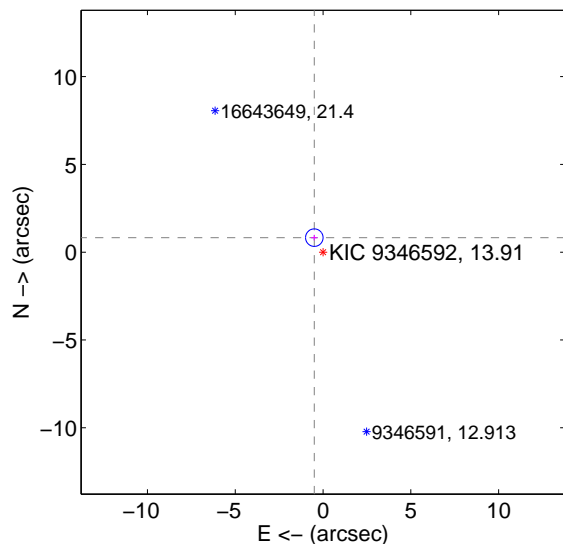
Supplemental centroid analysis for 009346592-03. Kepler magnitude: 13.91. Transit SNR 7.78

There are 2 quarters with good PRF difference image offsets

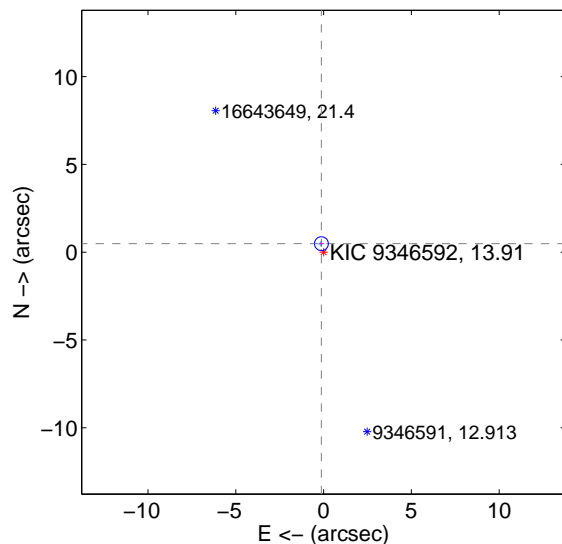
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.965 ± 0.166	5.81	0.497 ± 0.183	0.827 ± 0.160
PRF-fit source offset from KIC position	0.499 ± 0.132	3.79	0.124 ± 0.141	0.484 ± 0.131
photometric centroid source offset	4.25 ± 2.41	1.76	-0.17 ± 0.74	-4.24 ± 2.41

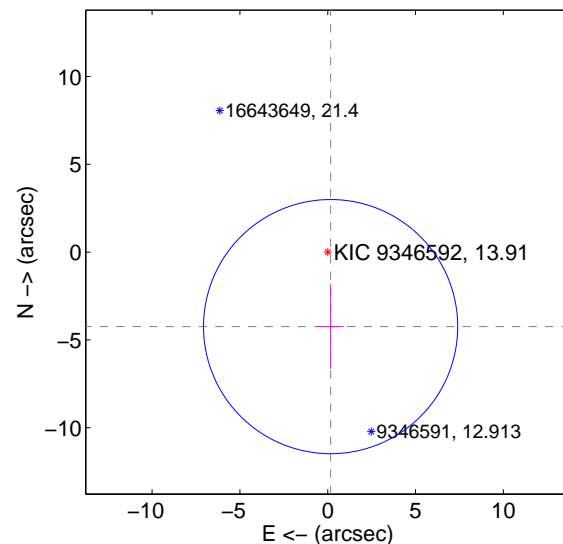
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

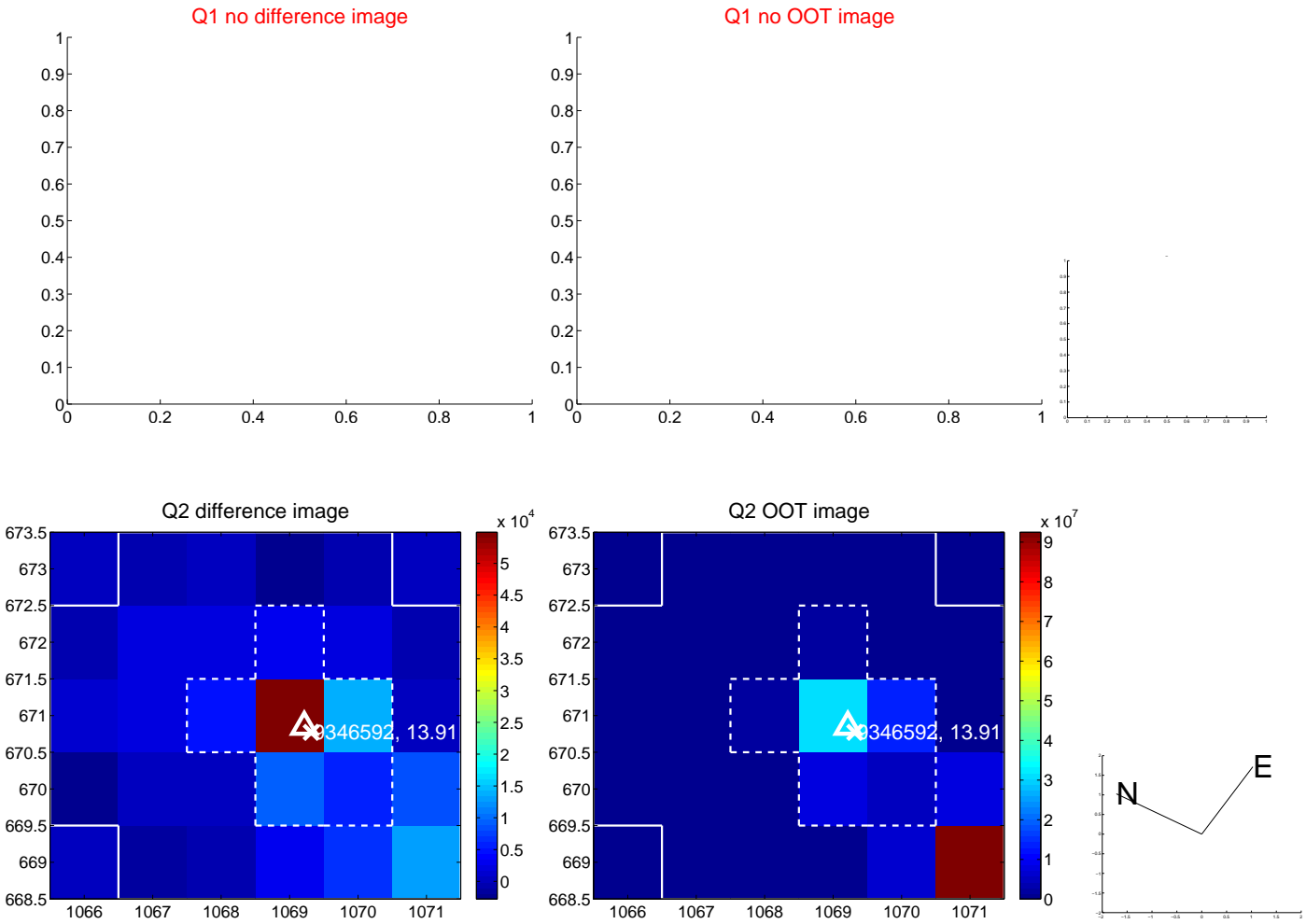


offset from photometric centroids

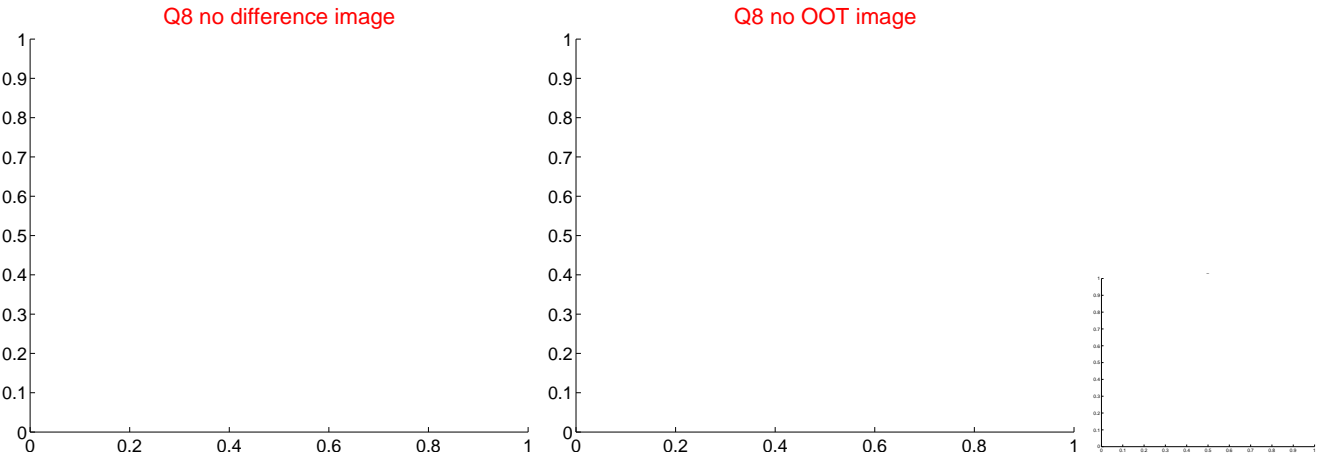
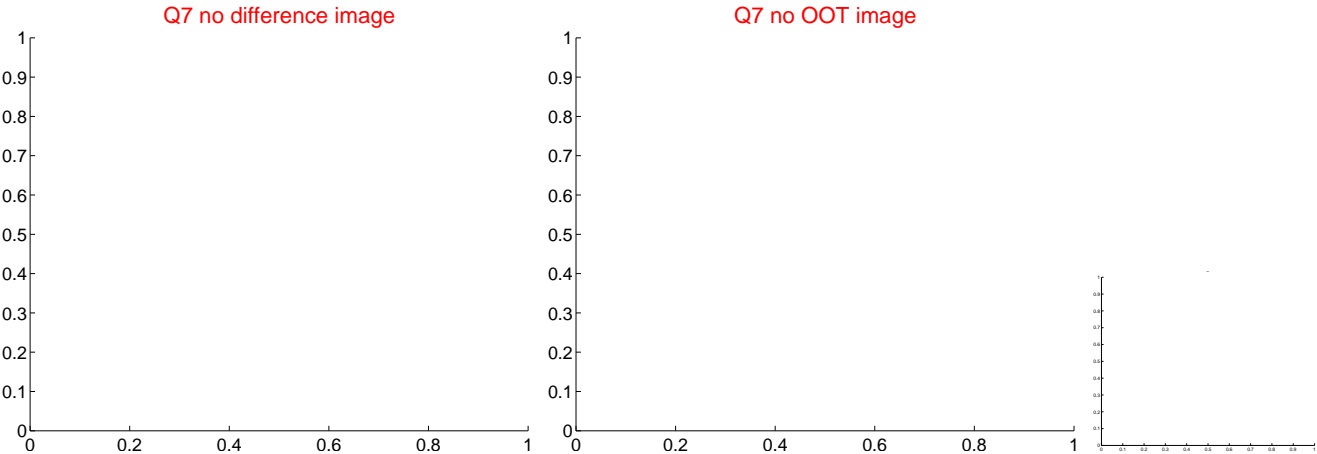
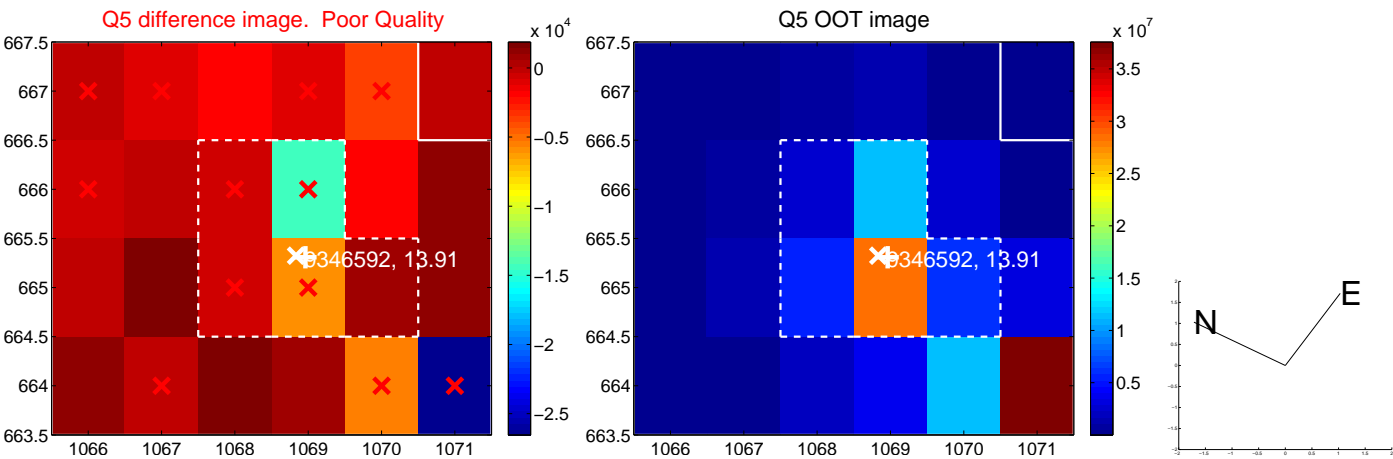


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

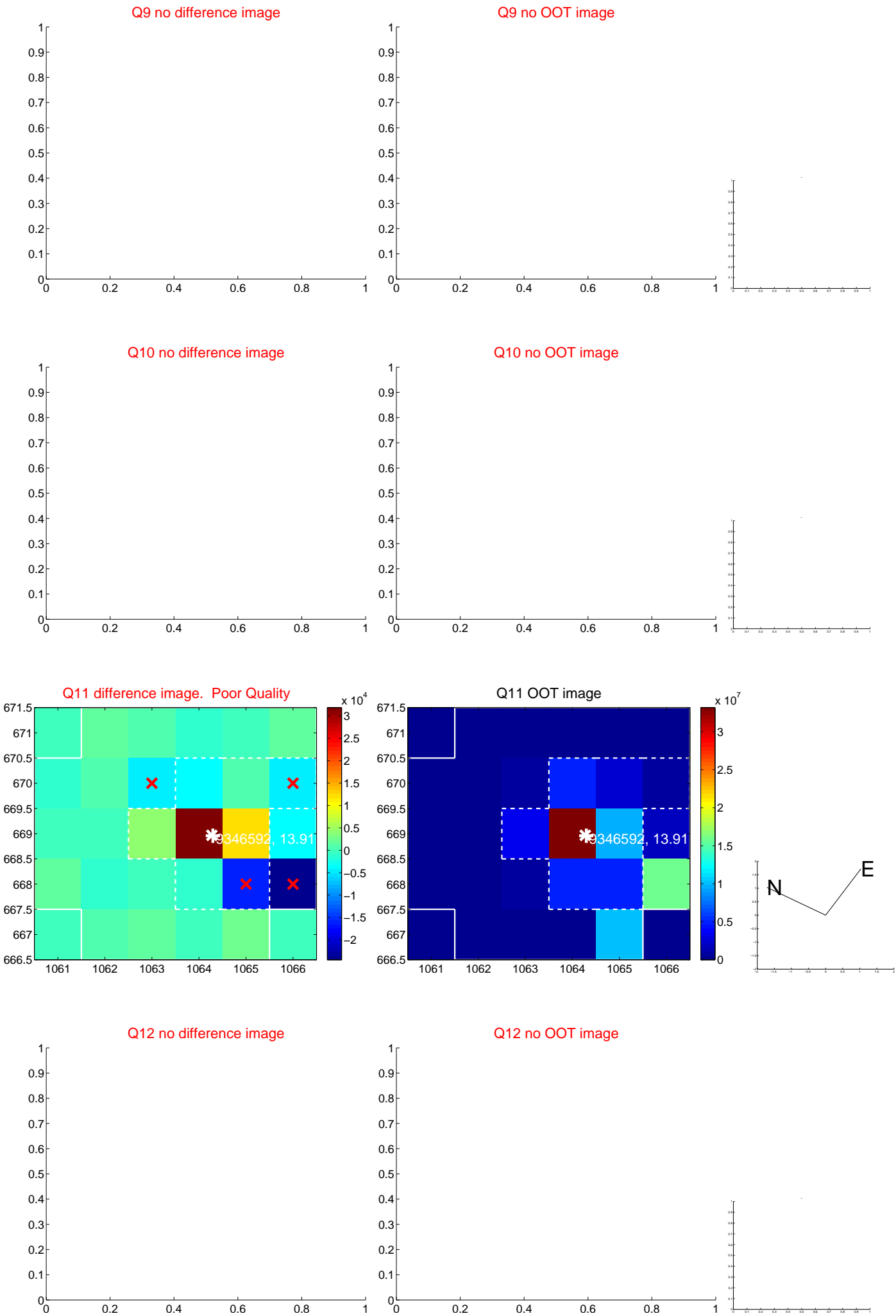
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



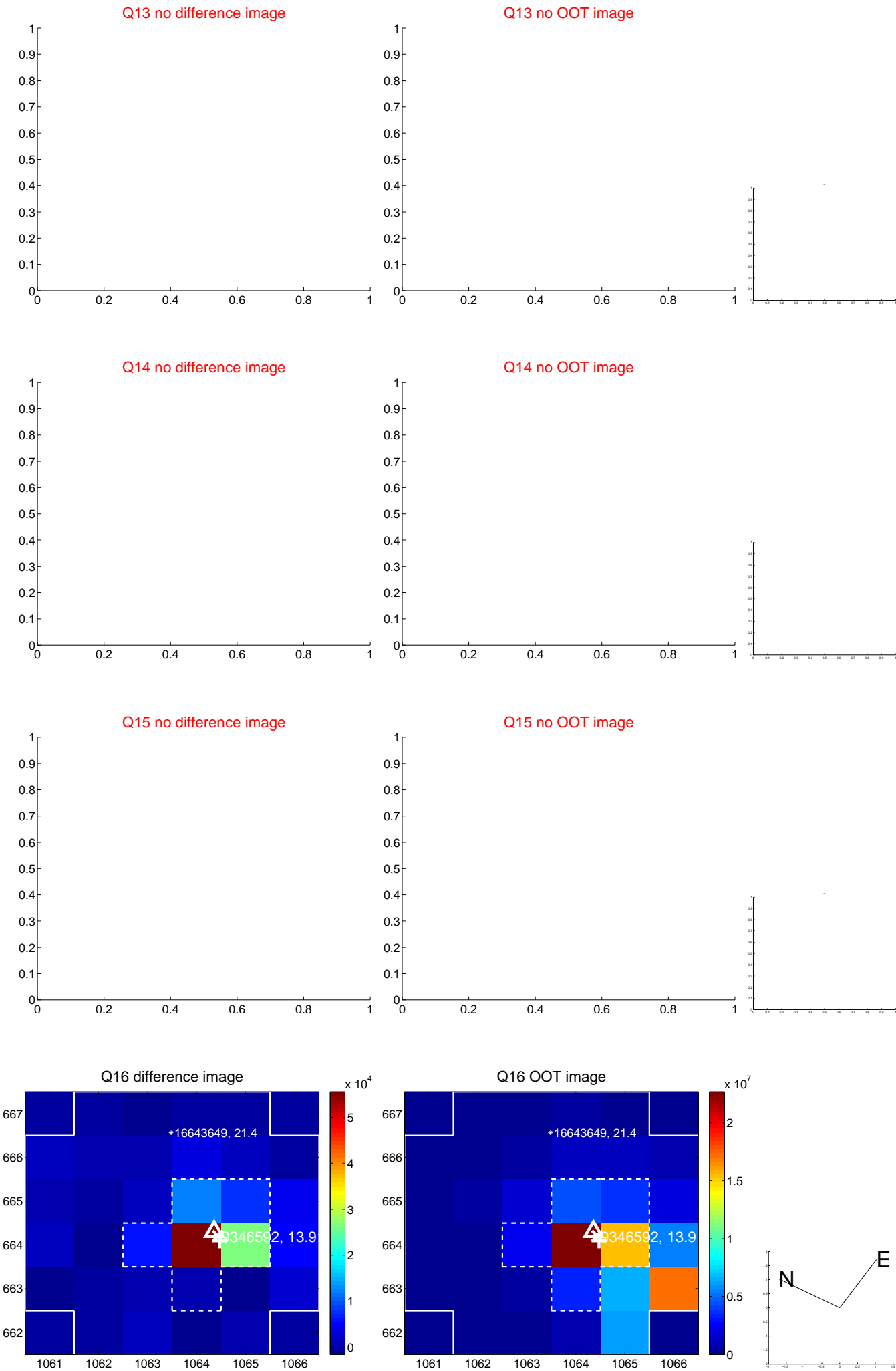
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



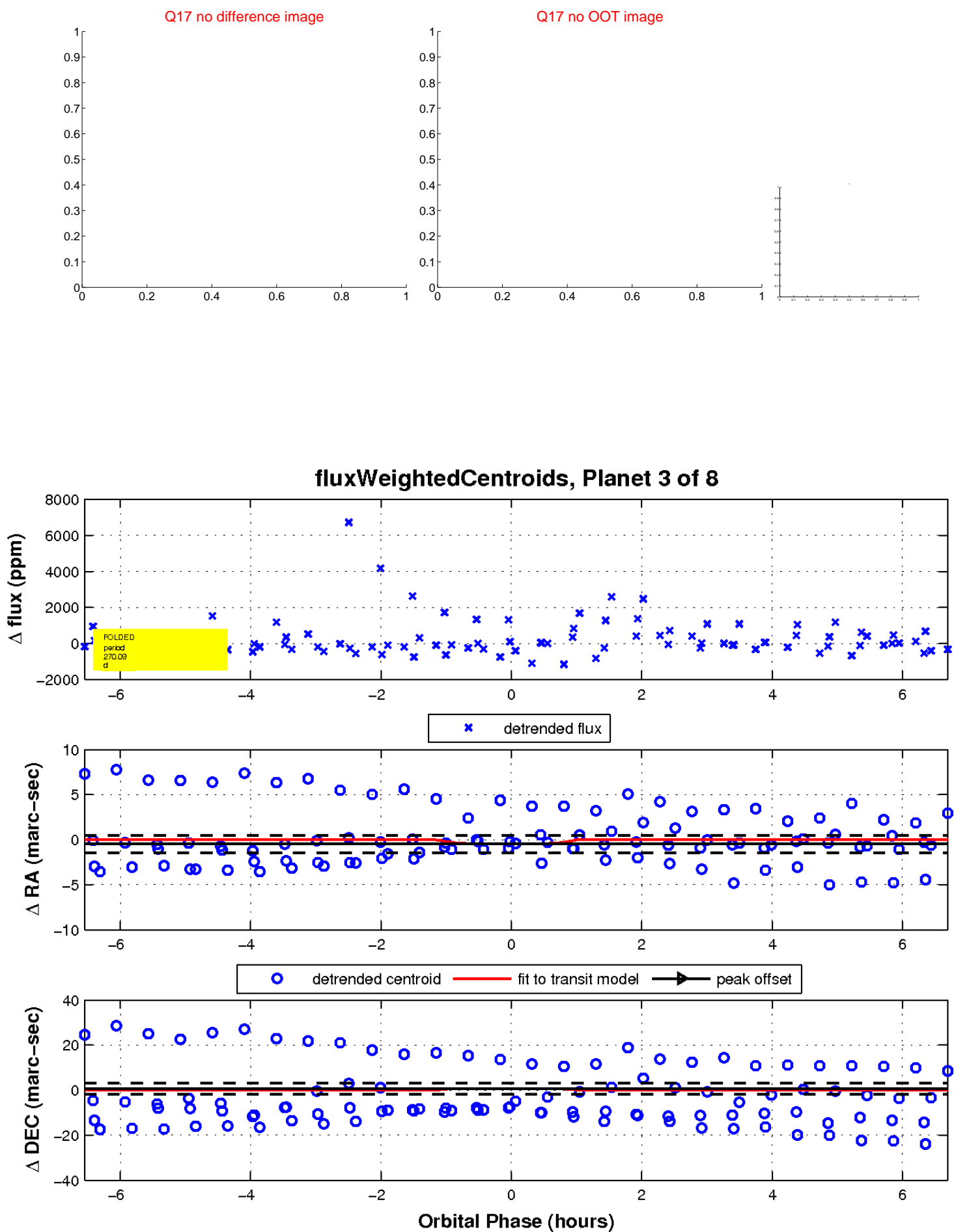
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

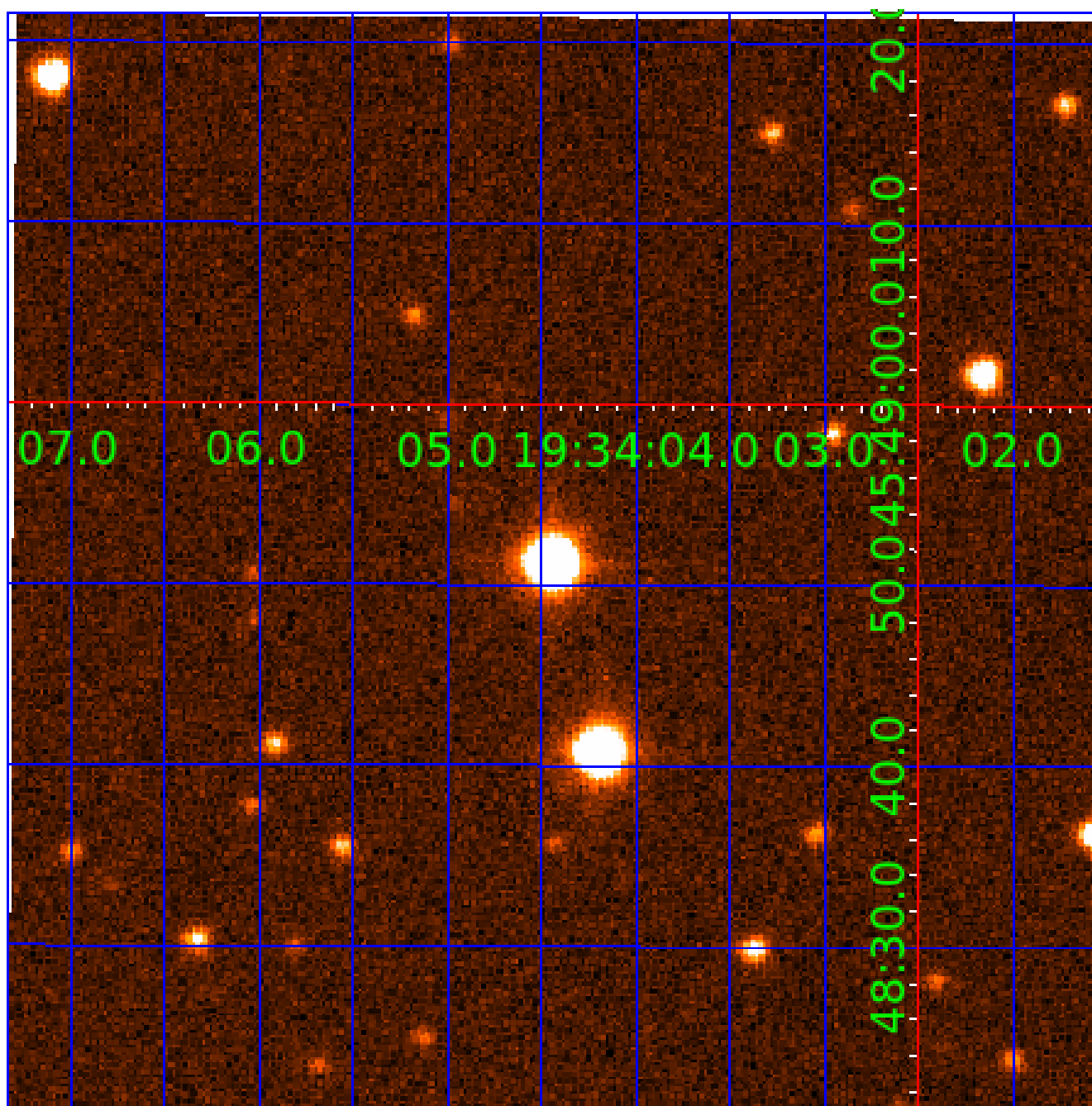


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009346592

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
009346592-01	OBS	No	504.746735	138.109841	1012.8	4.708	15.4	6.5	0.65	4234	2.03	0.11
009346592-02	OBS	No	504.919794	483.729108	807.2	9.458	15.5	4.7	0.65	4234	2.10	0.11
009346592-03	OBS	No	270.092408	193.258862	925.8	2.243	14.3	7.8	0.65	4234	2.37	0.24
009346592-04	OBS	No	399.981133	377.728840	639.9	3.920	13.7	5.3	0.65	4234	1.87	0.14
009346592-05	OBS	No	337.335446	250.824416	705.3	3.057	13.7	6.4	0.65	4234	1.90	0.18
009346592-06	OBS	No	391.787932	276.655756	742.4	9.022	12.7	4.8	0.65	4234	1.78	0.15
009346592-07	OBS	No	698.882333	172.118387	1119.5	7.401	13.9	7.3	0.65	4234	2.25	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009346592-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009346592-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS
009346592-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
009346592-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009346592-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009346592-06	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009346592-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

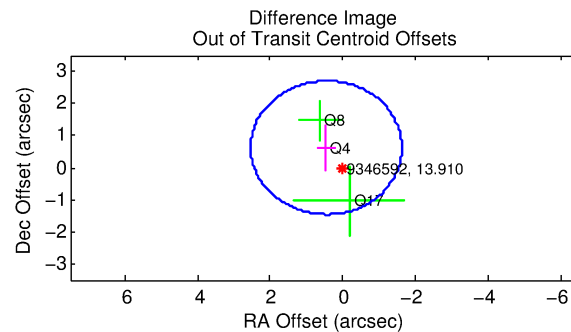
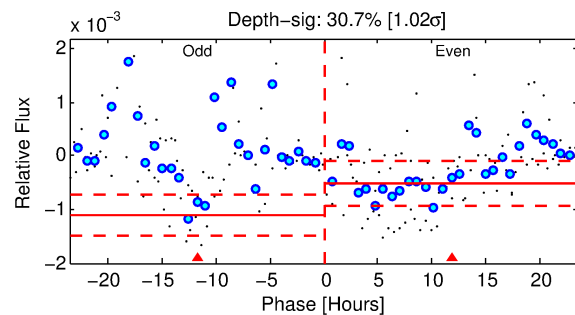
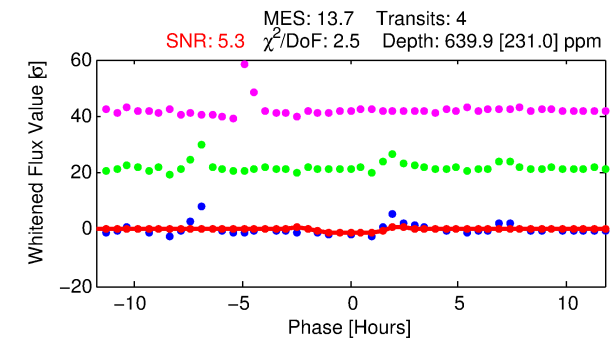
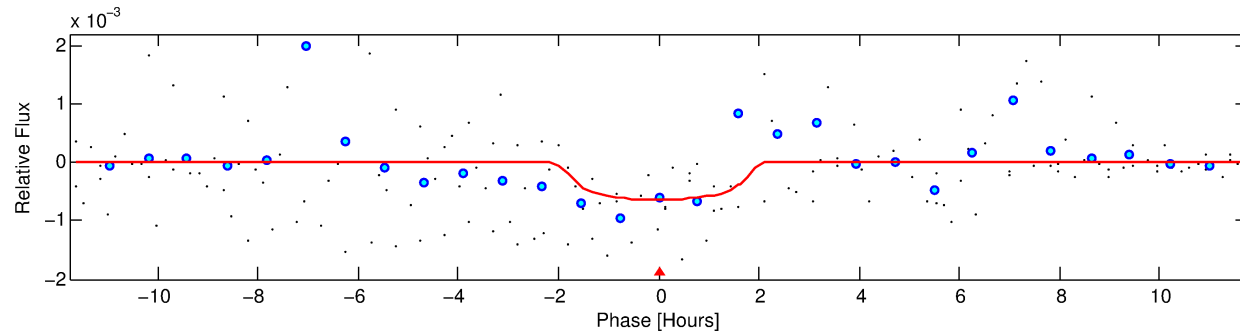
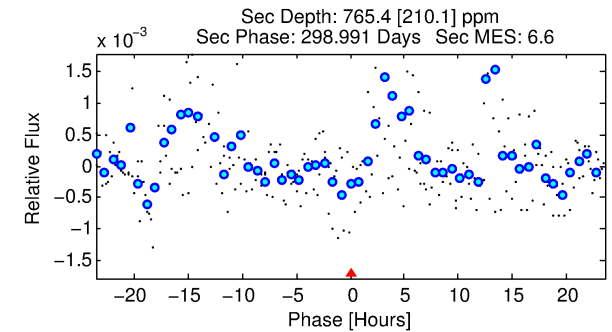
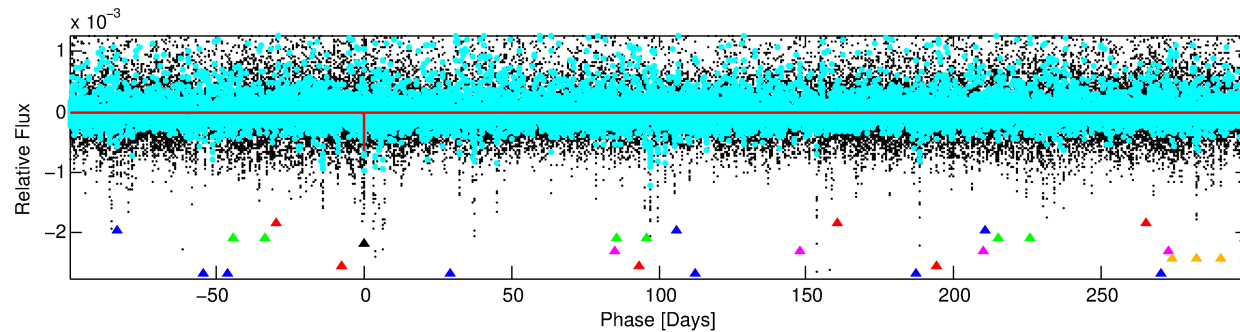
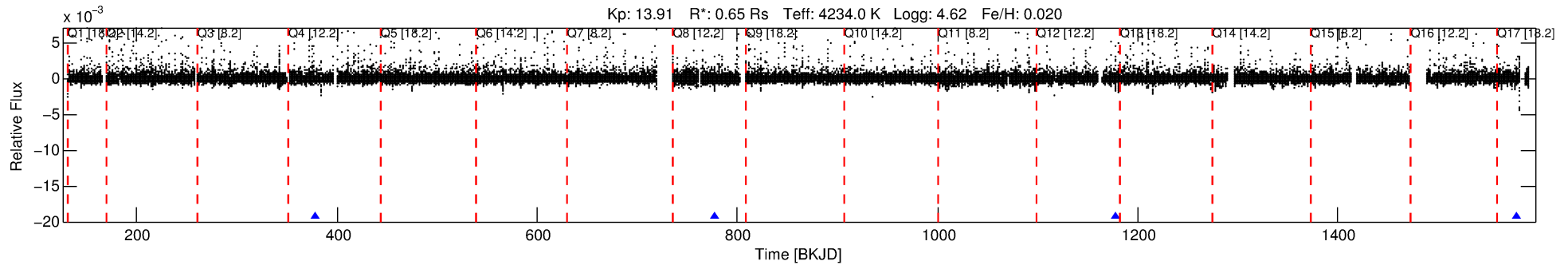
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009346592-04

No Significant Match Found

DV One-Page Summary

KIC: 9346592 Candidate: 4 of 8 Period: 399.981 d



DV Fit Results:

Period = 399.98113 [0.00811] d
Epoch = 377.7288 [0.0163] BKJD
Rp/R* = 0.0263 [0.0367]
a/R* = 488.47 [2284.31]
b = 0.81 [1.99]
Seff = 0.14 [0.02]
Teq = 157 [6] K
Rp = 1.87 [2.61] Re
a = 0.9162 [0.0684] AU
Ag = 101412.24 [284240.51] [0.36 σ]
Teffp = 4341 [3042] K [1.38 σ]

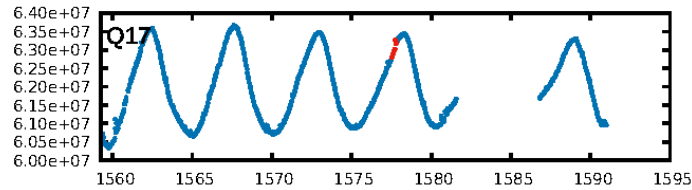
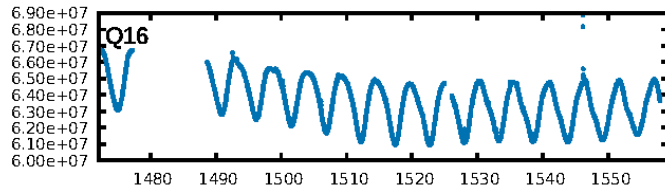
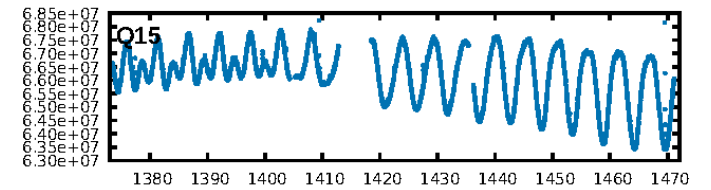
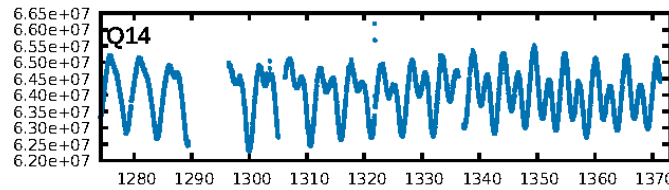
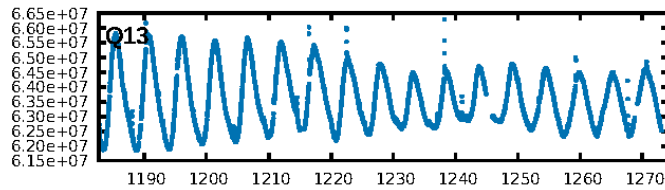
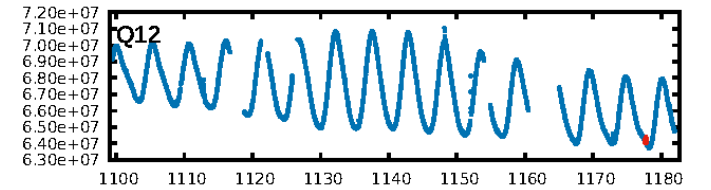
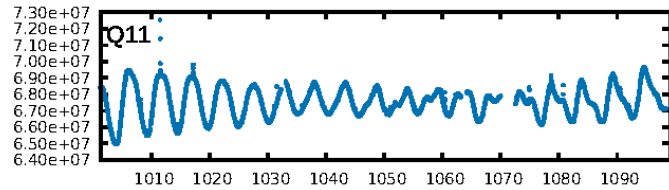
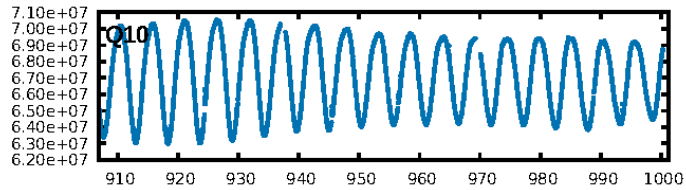
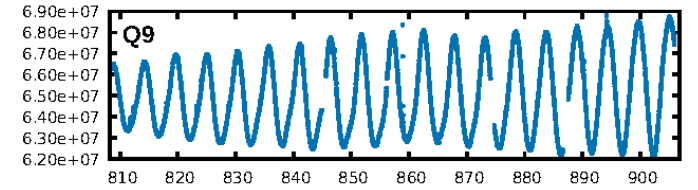
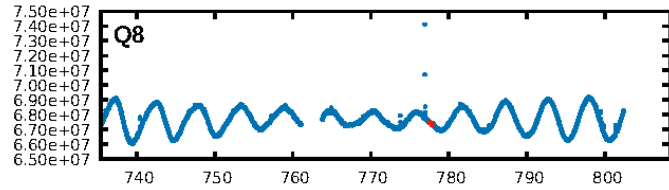
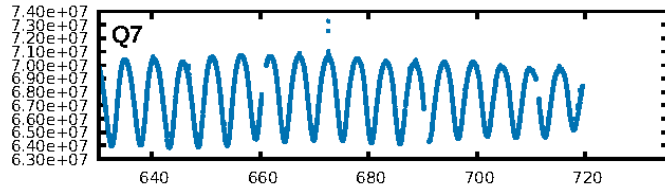
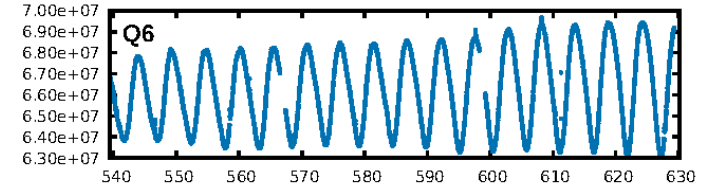
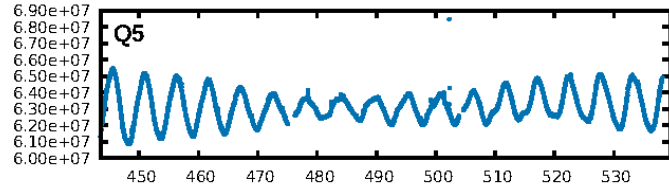
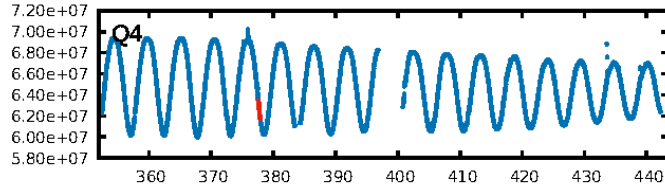
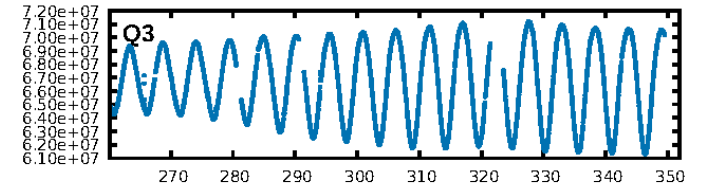
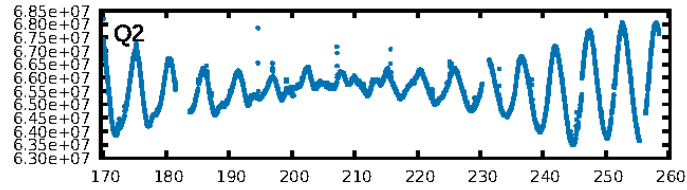
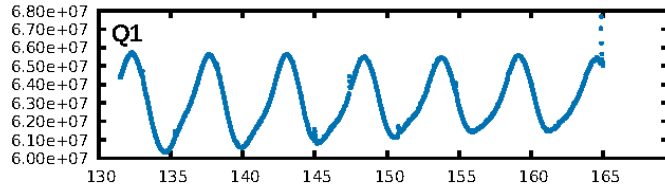
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.99 σ]
LongPeriod-sig: 100.0% [410.46 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 6.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.1968
Centroid-sig: 77.7%
Centroid-so: 4.670 arcsec [0.92 σ]
OotOffset-rm: 0.770 arcsec [1.11 σ]
OotOffset-st: 0/0/2/1 [3]
KicOffset-rm: 0.195 arcsec [0.29 σ]
KicOffset-st: 0/0/2/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

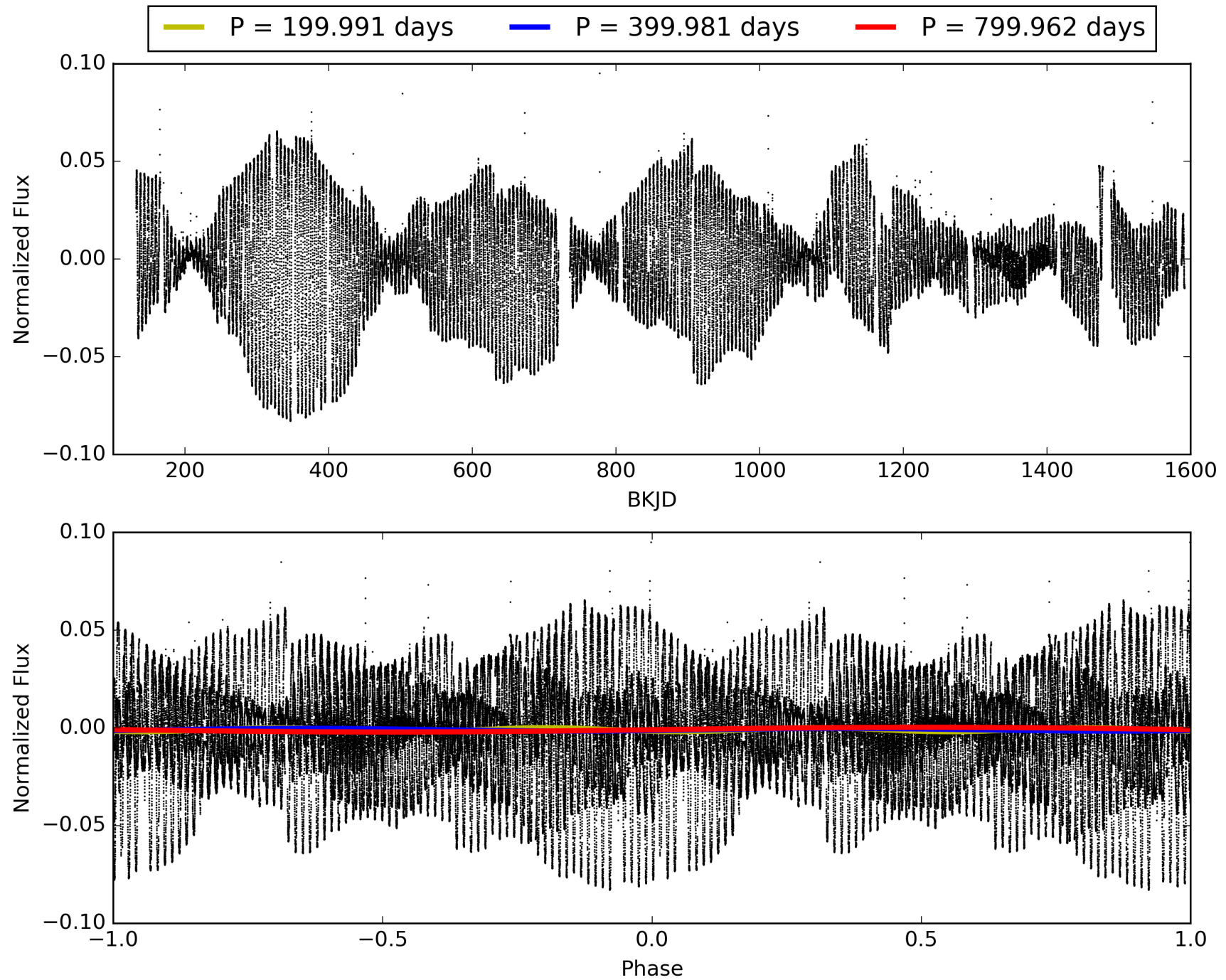
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:26:57 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009346592-04, PDC Light Curves

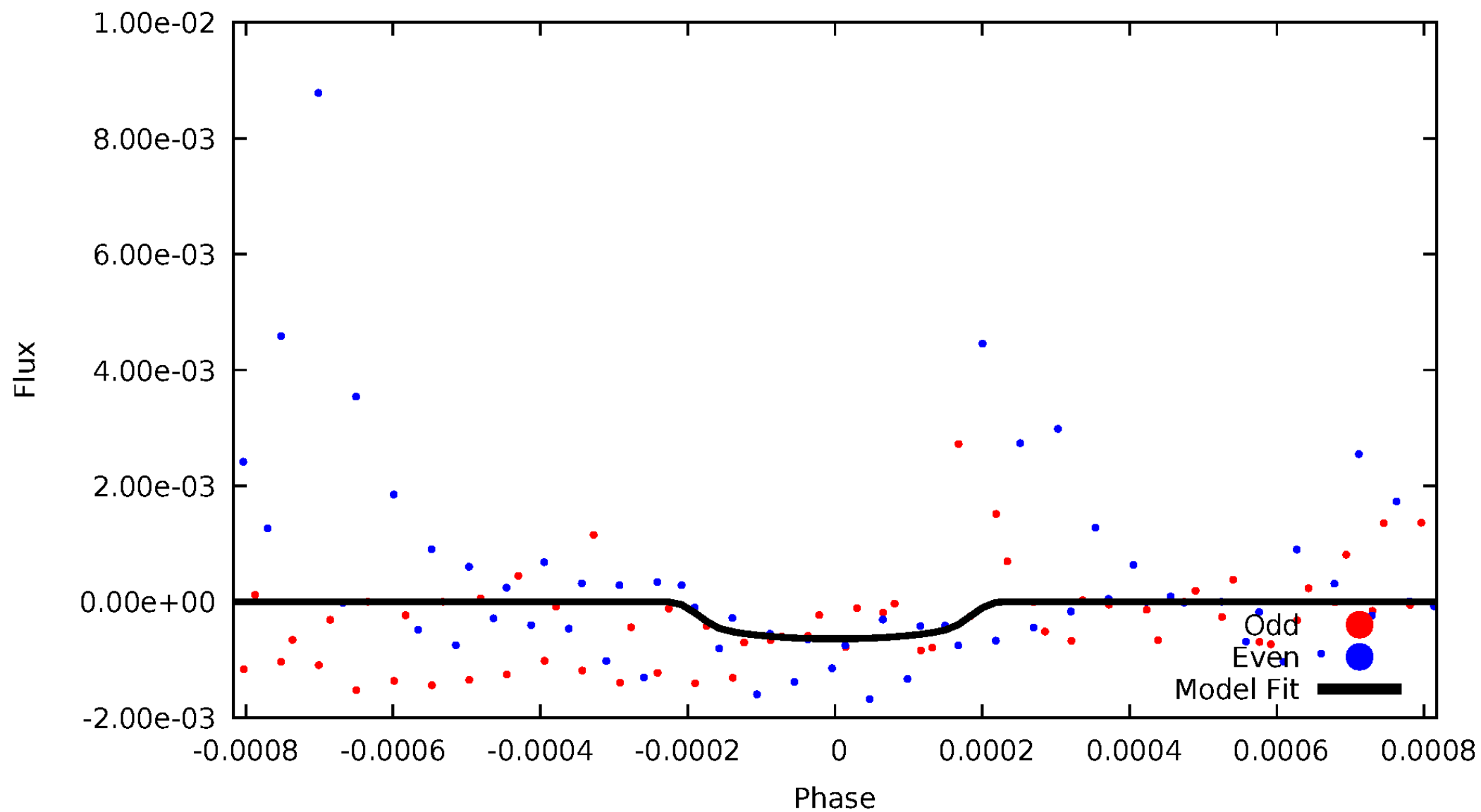


TCE 009346592-04



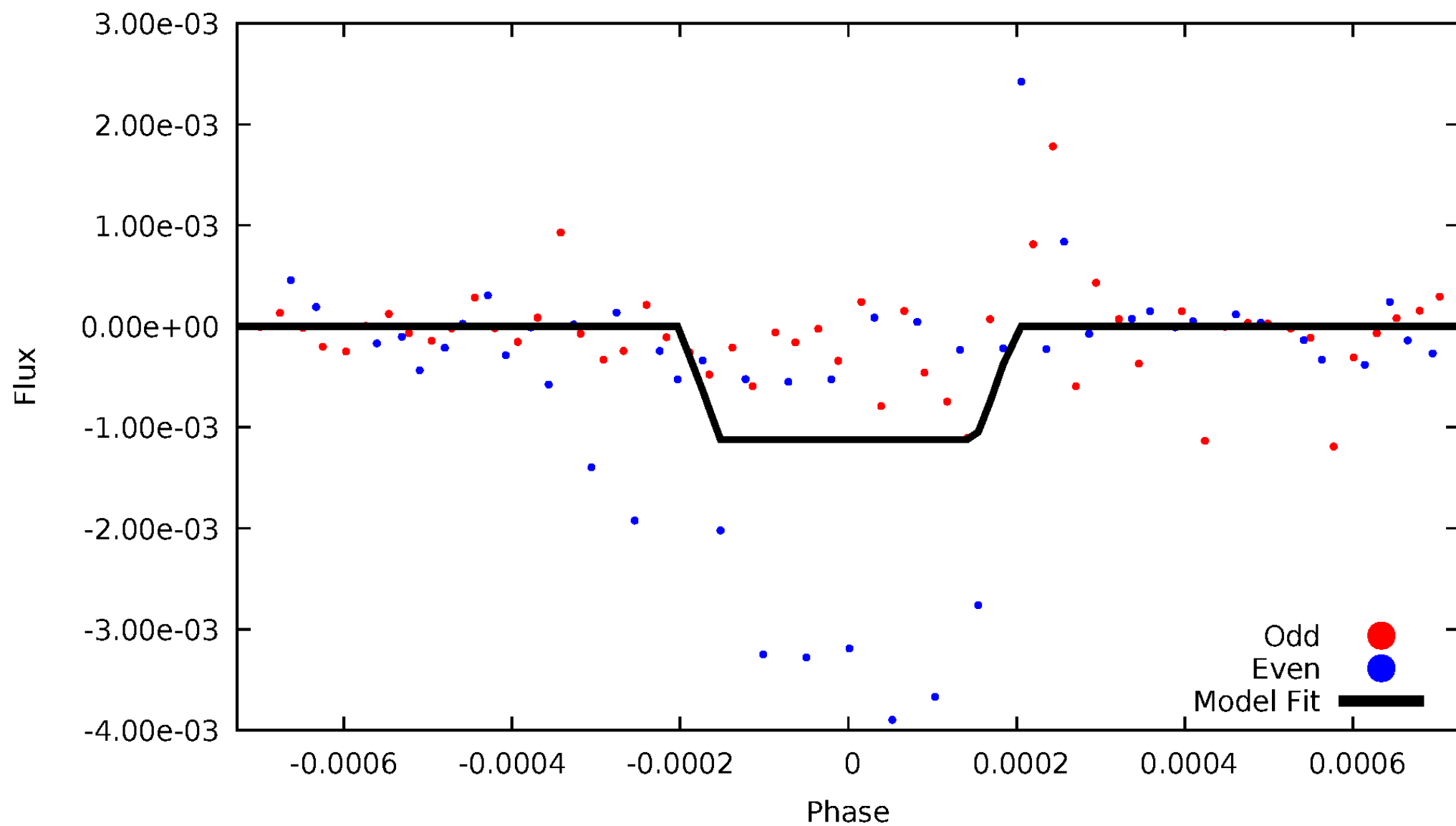
DV Odd/Even

TCE 009346592-04



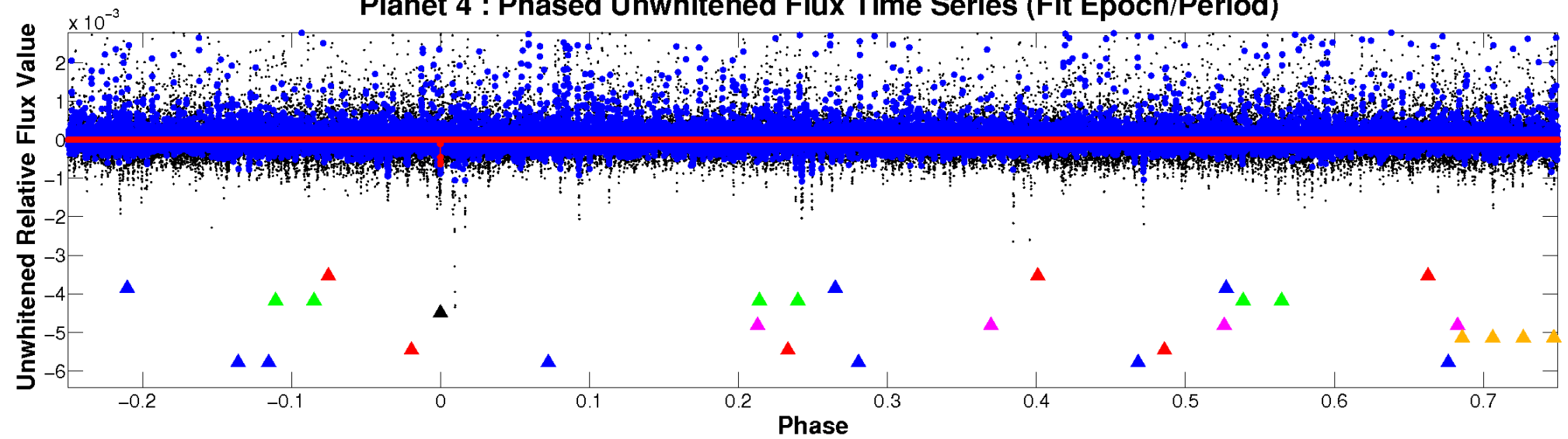
ALT Odd/Even

TCE 009346592-04

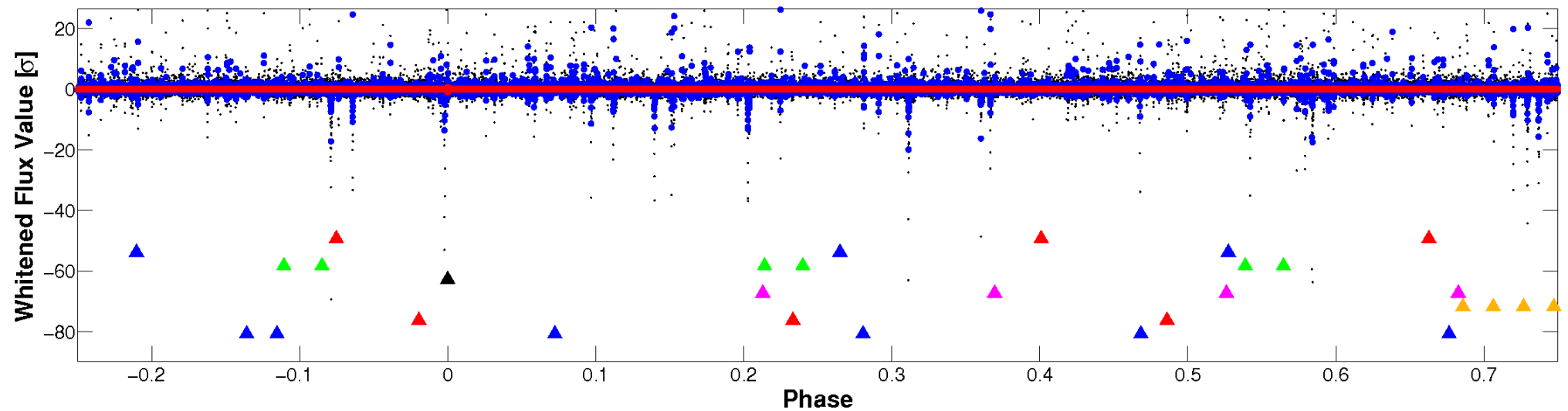


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

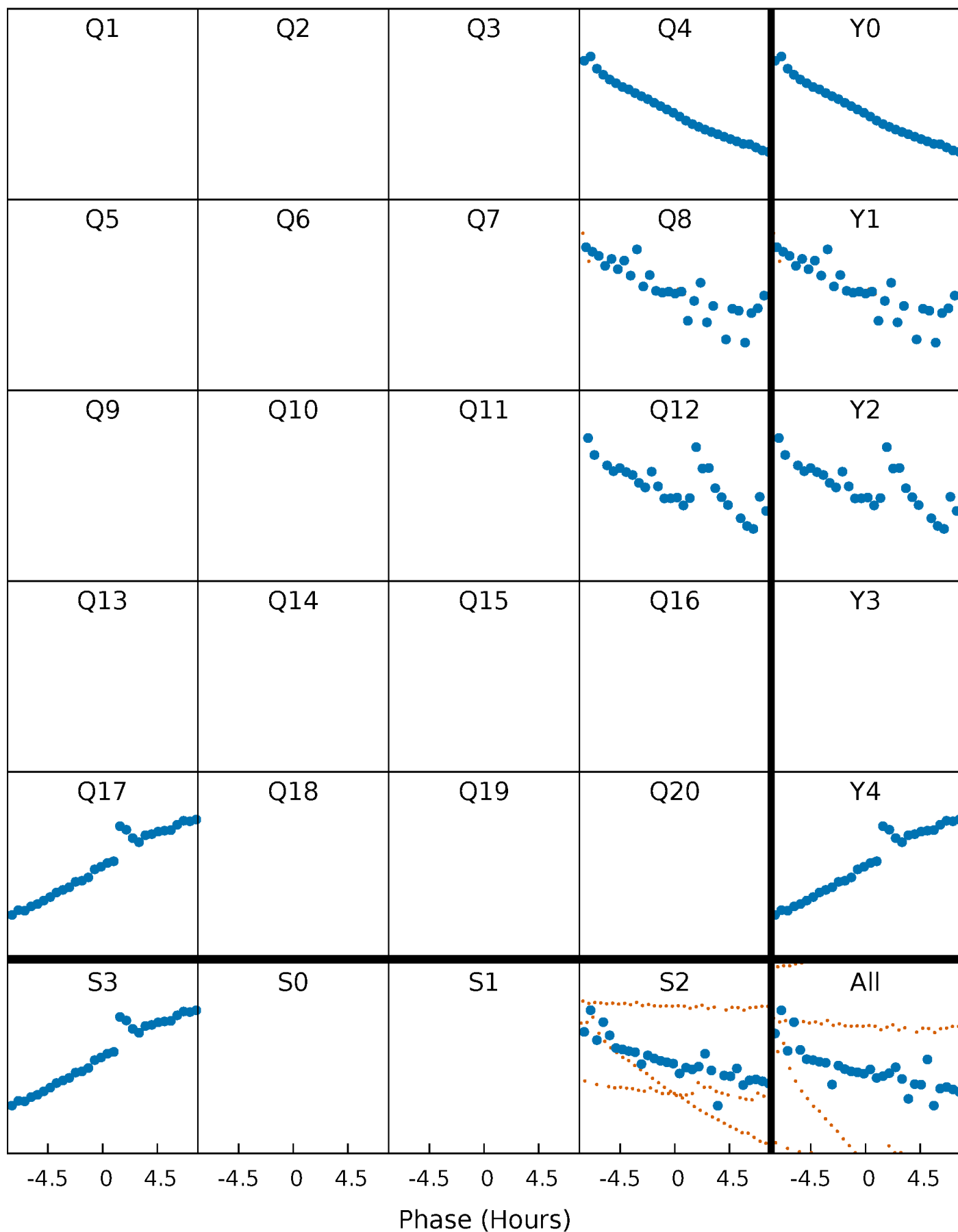


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



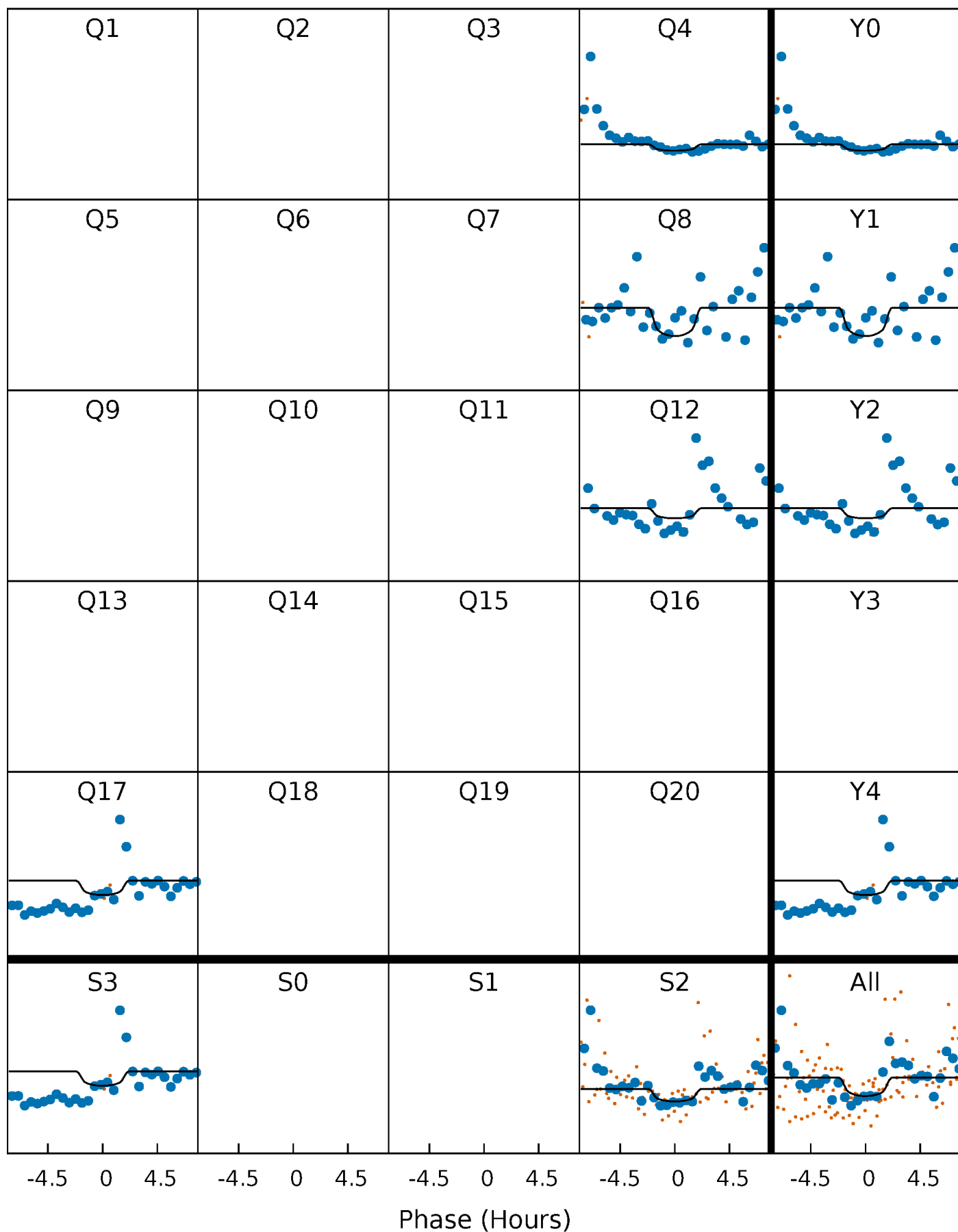
PDC Quarter-Phased Transit Curves

TCE 009346592-04 $P=399.981133$ Days $T_0=377.728840$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009346592-04 $P=399.981133$ Days $T_0=377.728840$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

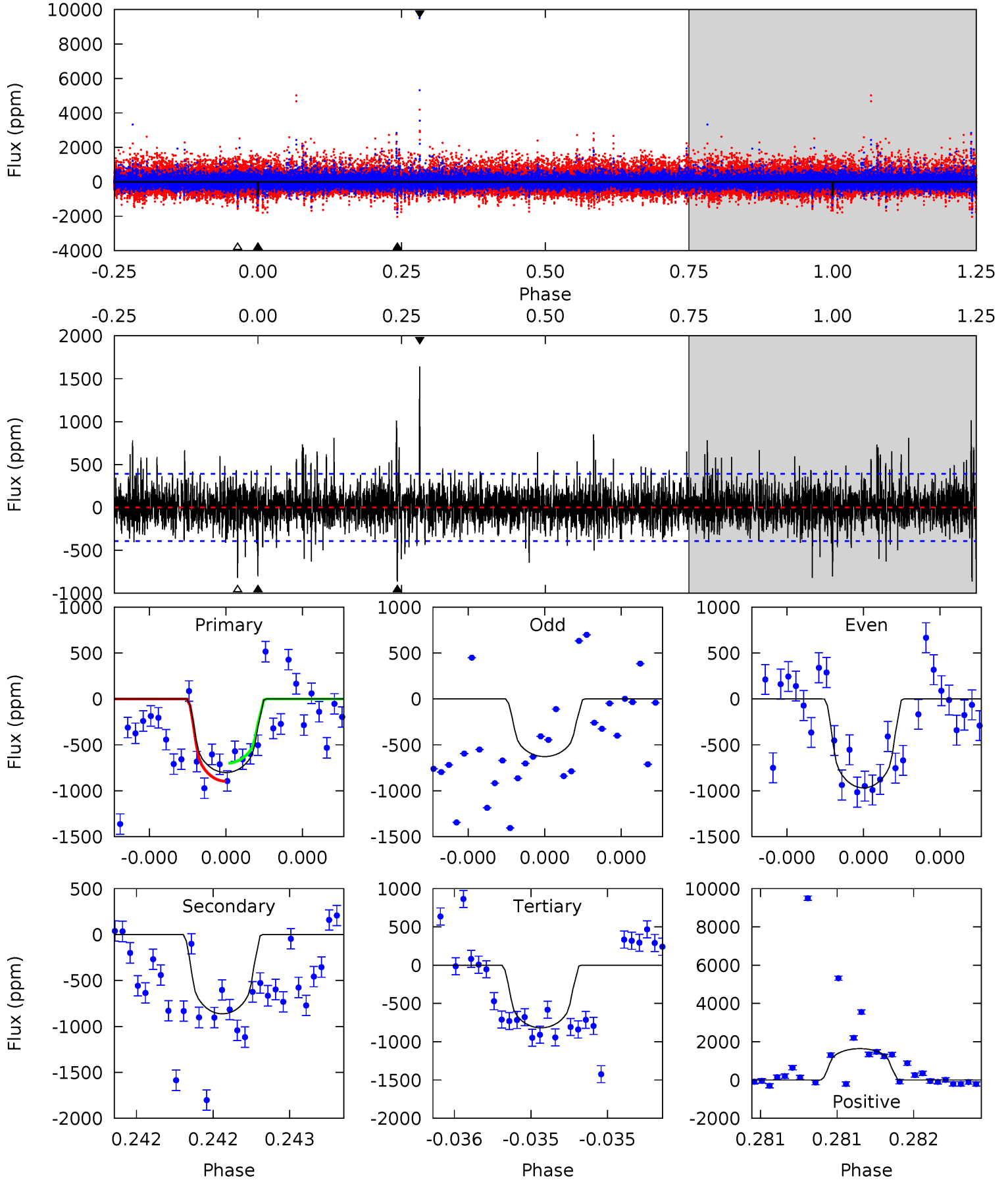
TCE 009346592-04 $P=399.973315$ Days $T_0=377.742443$ (BKJD)



DV Model-Shift Uniqueness Test

009346592-04, P = 399.981133 Days, E = 377.728840 Days

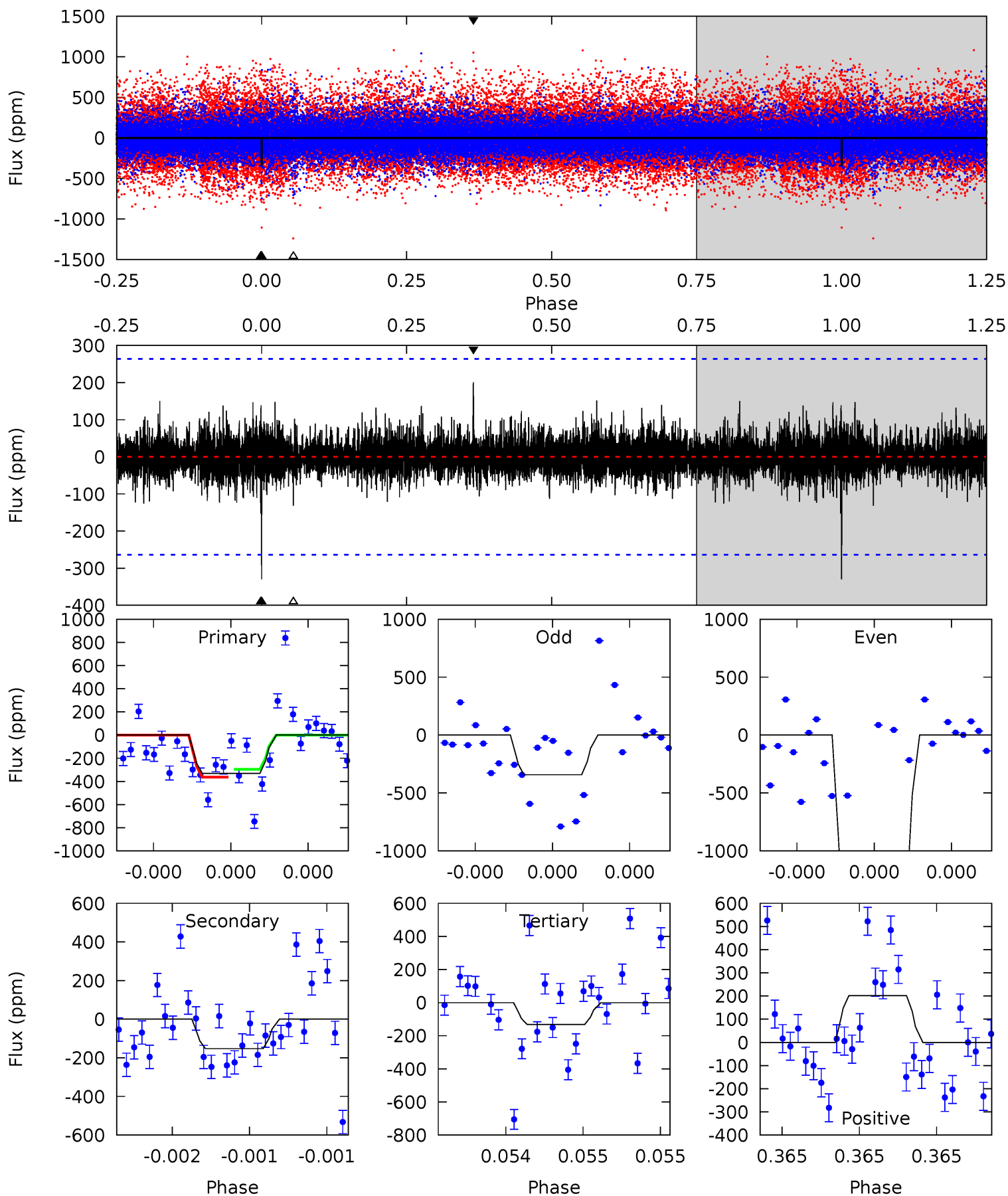
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	12.3	11.7	23.4	5.59	3.51	2.24	-0.24	-12.0	0.64	-11.1	1.66	1.29	0.66	1.39



Alt Model-Shift Uniqueness Test

009346592-04, P = 399.973315 Days, E = 377.742443 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.04	3.25	2.80	4.29	5.62	3.56	0.69	4.24	2.75	0.45	-1.04	12.5	2.35	0.38	0.71



Stellar Parameters For KIC 009346592

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4234^{+128}_{-128}	$4.619^{+0.053}_{-0.018}$	$0.020^{+0.250}_{-0.300}$	$0.650^{+0.036}_{-0.061}$	$0.640^{+0.056}_{-0.056}$	$3.283^{+0.769}_{-0.283}$
	+3%/-3%	+1%/-0%	+1250%/-1500%	+6%/-9%	+9%/-9%	+23%/-9%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009346592-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-863 ± 70	$2.53^{+2.51}_{-1.53}$	218^{+8}_{-8}	3912^{+1849}_{-737}	$62279^{+344504}_{-46286}$
Alt.	-152 ± 47	$2.92^{+2.19}_{-1.91}$	218^{+8}_{-7}	2878^{+1065}_{-412}	8298^{+56040}_{-5845}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

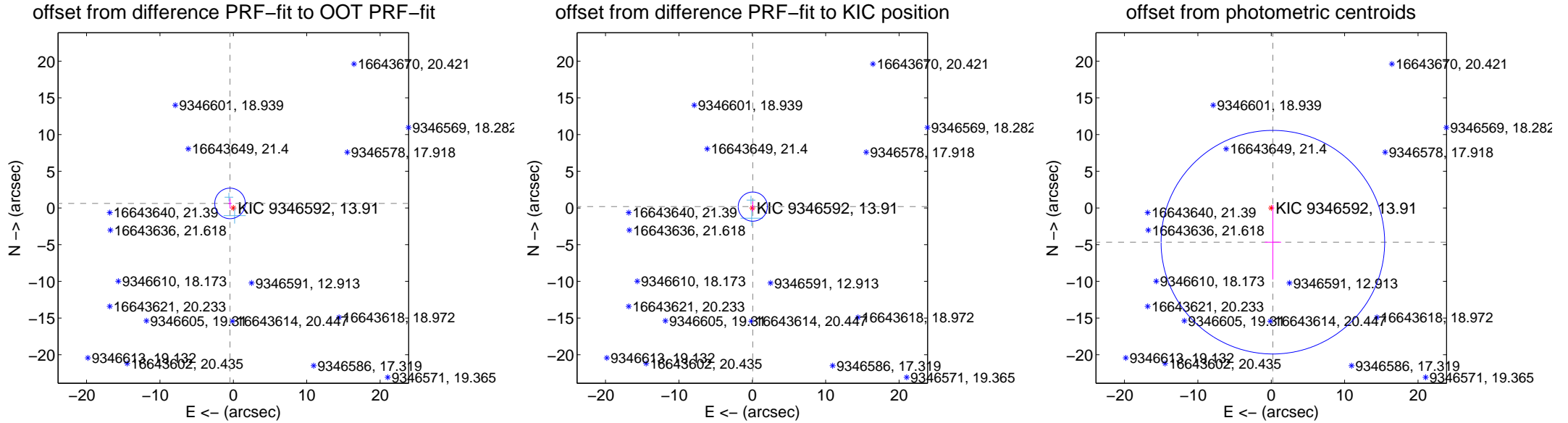
DV Centroid Data

Supplemental centroid analysis for 009346592-04. Kepler magnitude: 13.91. Transit SNR 5.30

There are 3 quarters with good PRF difference image offsets

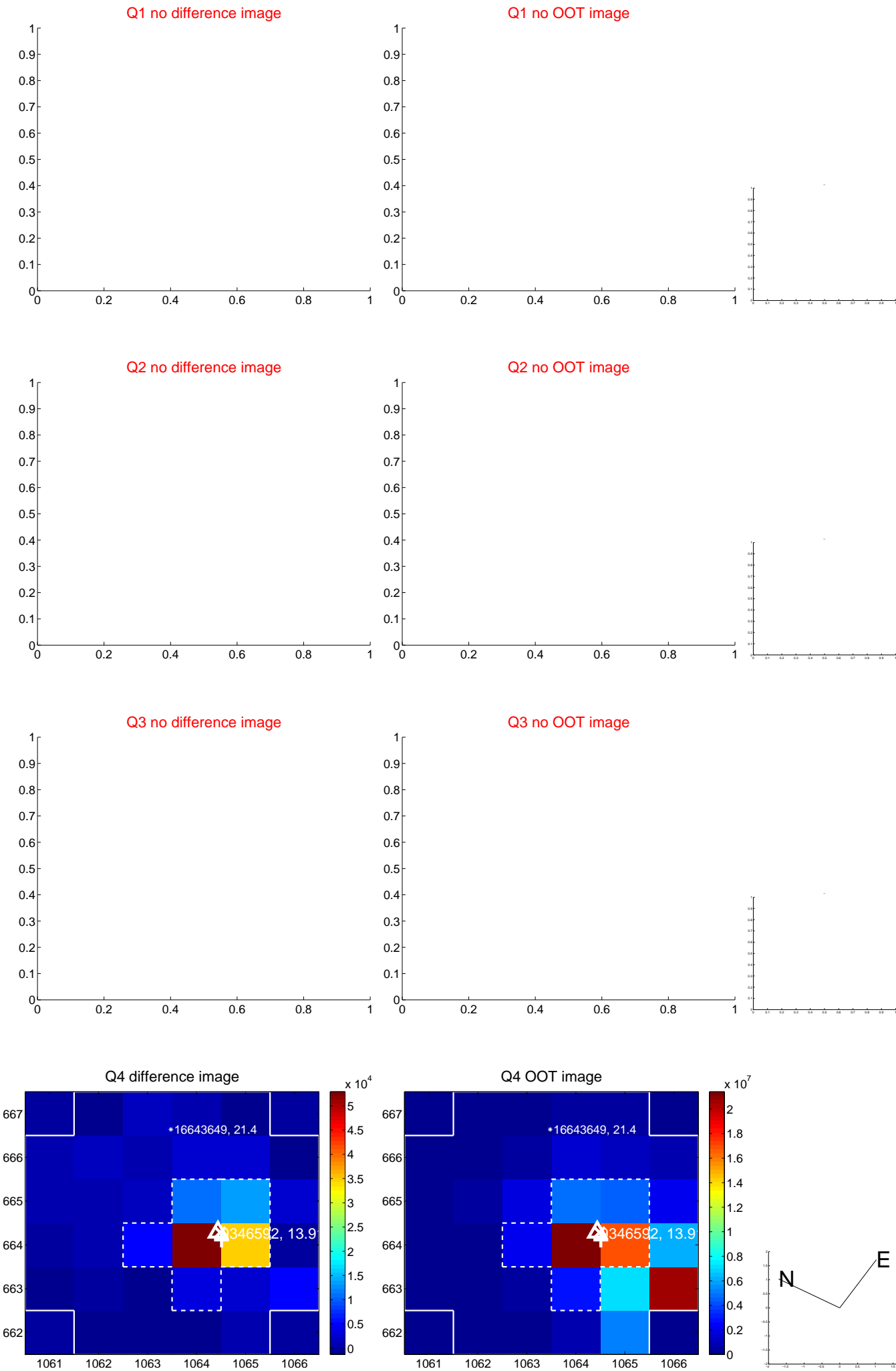
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.770 ± 0.694	1.11	0.455 ± 0.247	0.621 ± 0.685
PRF-fit source offset from KIC position	0.195 ± 0.662	0.29	-0.067 ± 0.084	0.183 ± 0.708
photometric centroid source offset	4.67 ± 5.08	0.92	-0.22 ± 1.11	-4.67 ± 5.08

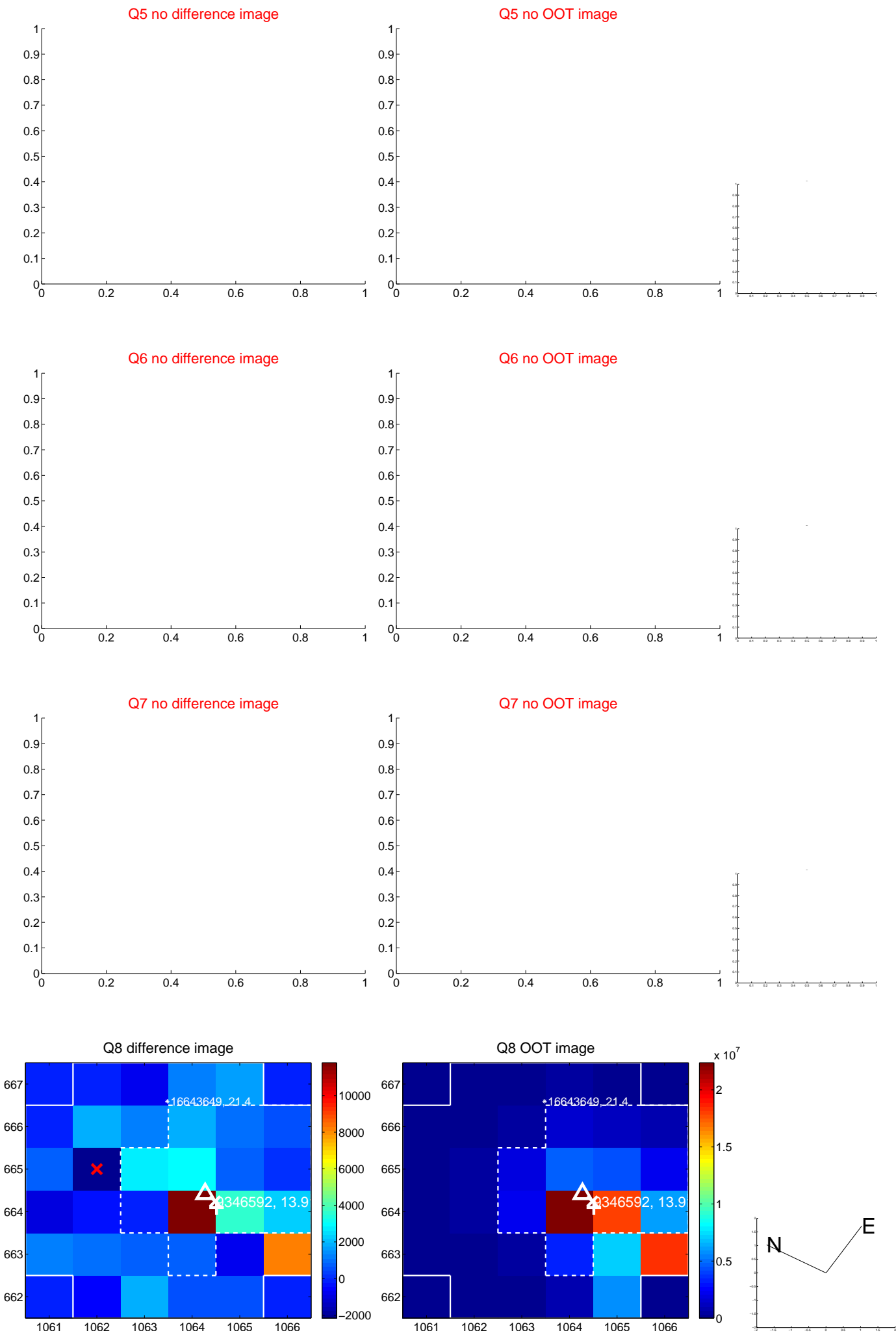


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



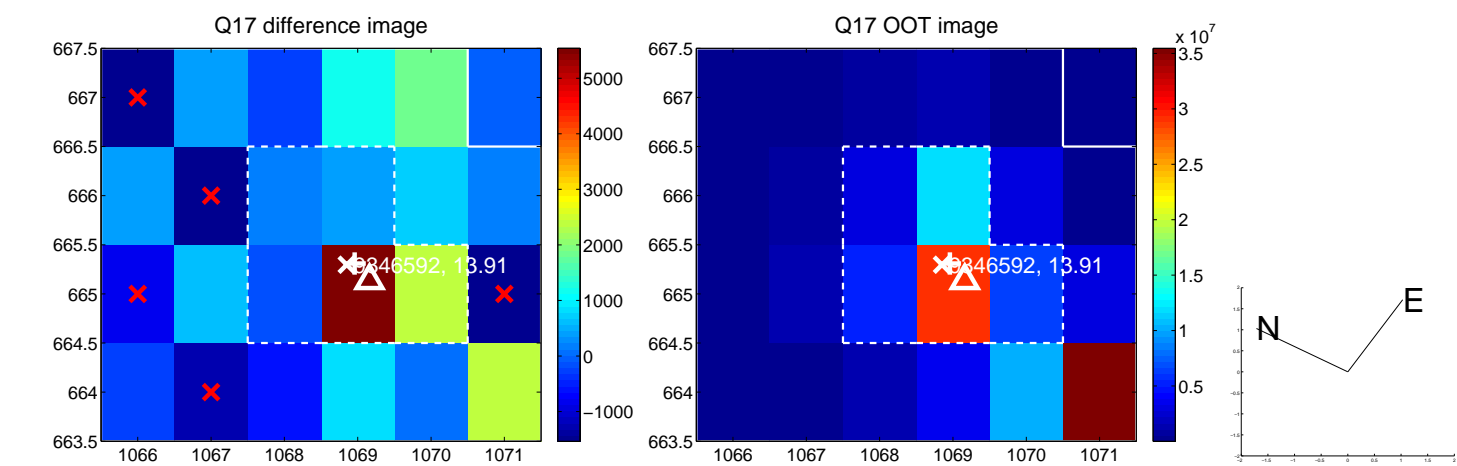
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



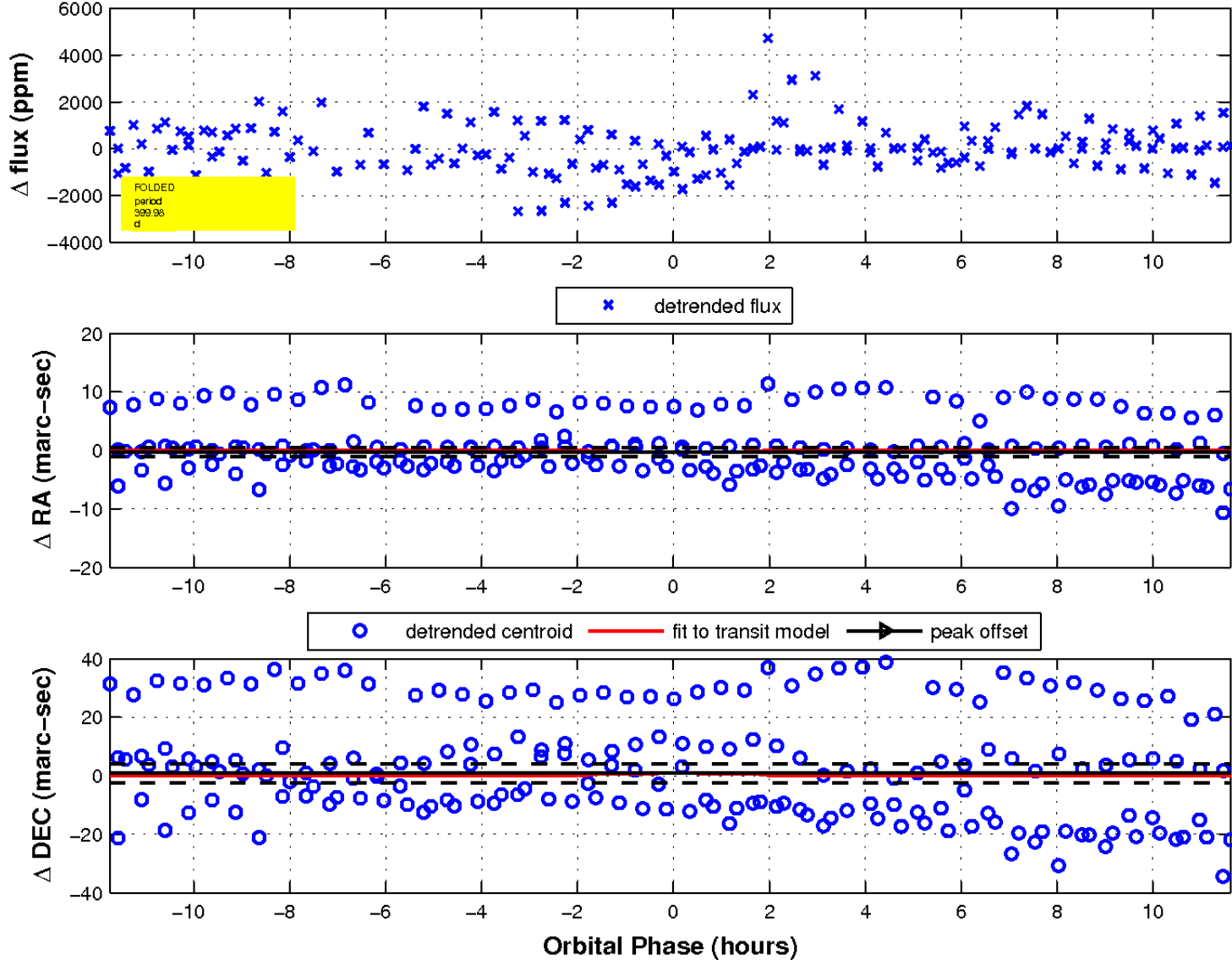
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

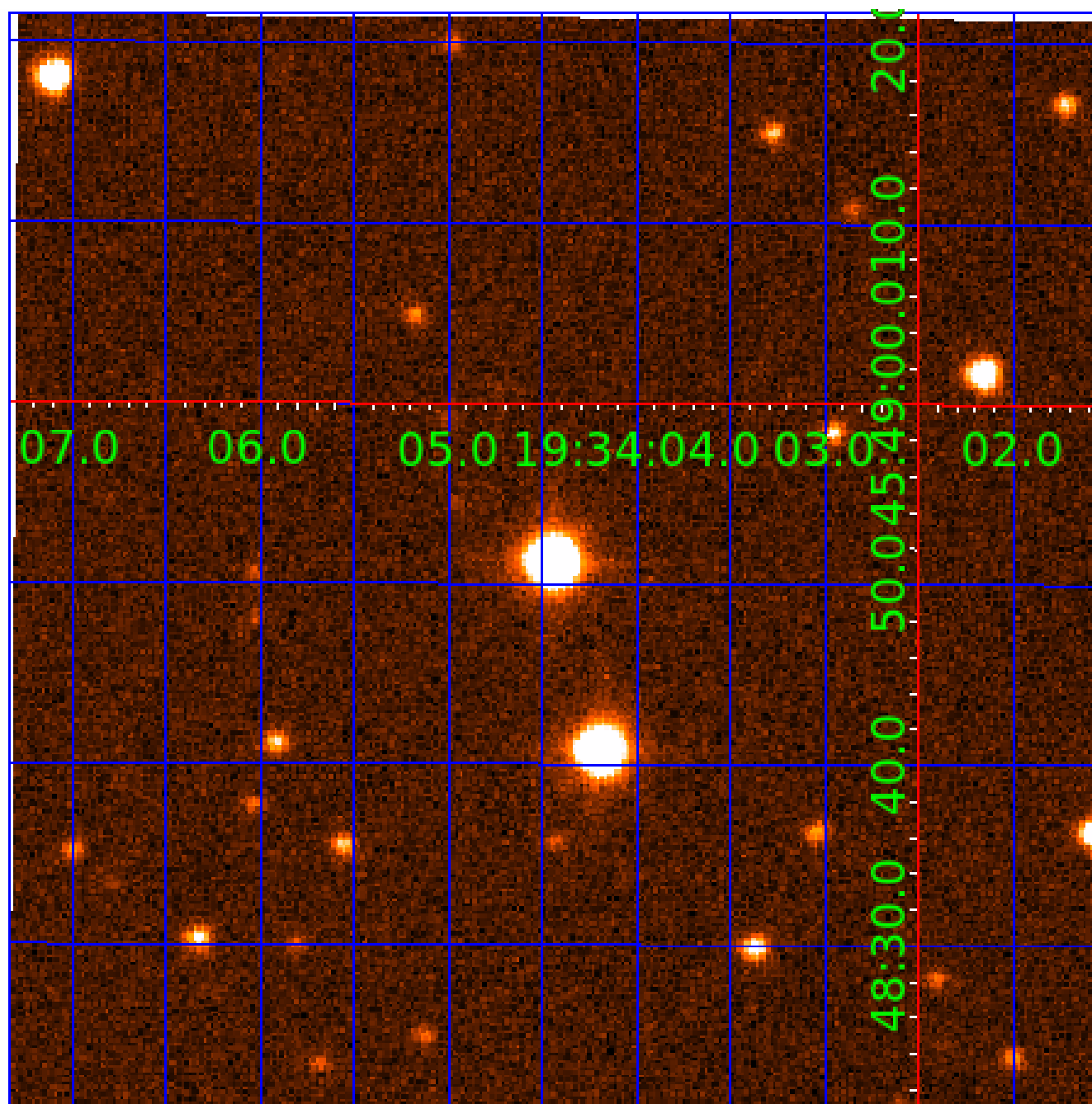


fluxWeightedCentroids, Planet 4 of 8



UKIRT Image

Declination



KIC 009346592

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
009346592-01	OBS	No	504.746735	138.109841	1012.8	4.708	15.4	6.5	0.65	4234	2.03	0.11
009346592-02	OBS	No	504.919794	483.729108	807.2	9.458	15.5	4.7	0.65	4234	2.10	0.11
009346592-03	OBS	No	270.092408	193.258862	925.8	2.243	14.3	7.8	0.65	4234	2.37	0.24
009346592-04	OBS	No	399.981133	377.728840	639.9	3.920	13.7	5.3	0.65	4234	1.87	0.14
009346592-05	OBS	No	337.335446	250.824416	705.3	3.057	13.7	6.4	0.65	4234	1.90	0.18
009346592-06	OBS	No	391.787932	276.655756	742.4	9.022	12.7	4.8	0.65	4234	1.78	0.15
009346592-07	OBS	No	698.882333	172.118387	1119.5	7.401	13.9	7.3	0.65	4234	2.25	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009346592-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009346592-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS
009346592-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
009346592-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009346592-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009346592-06	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009346592-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

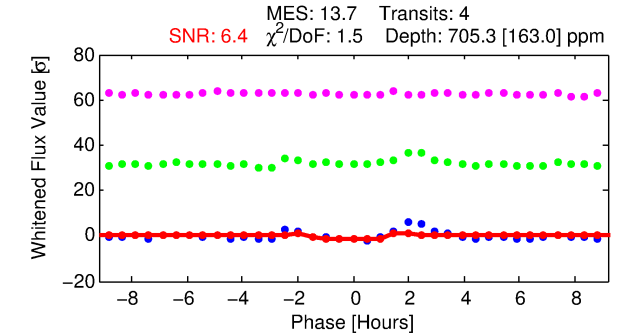
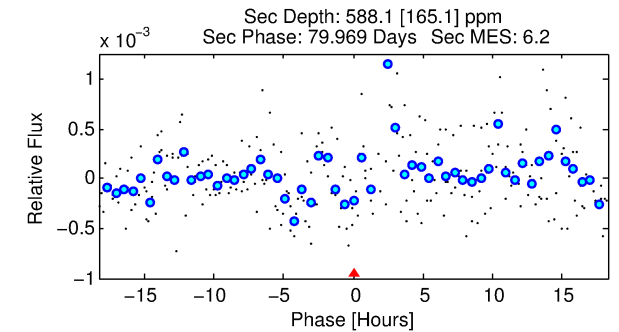
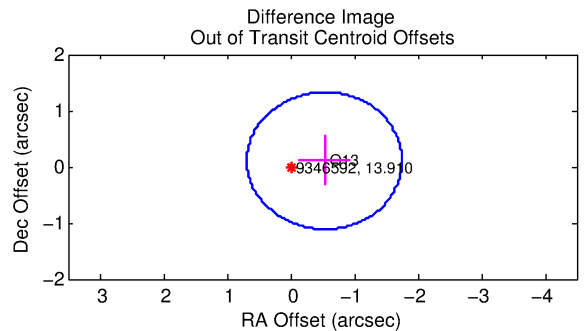
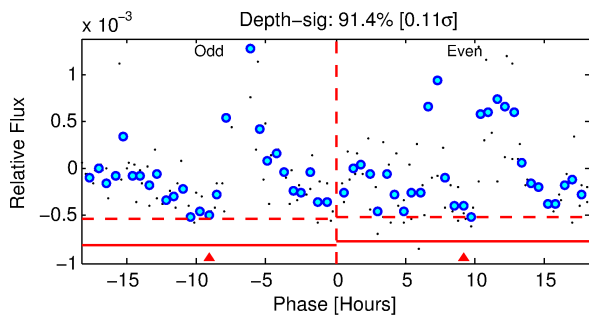
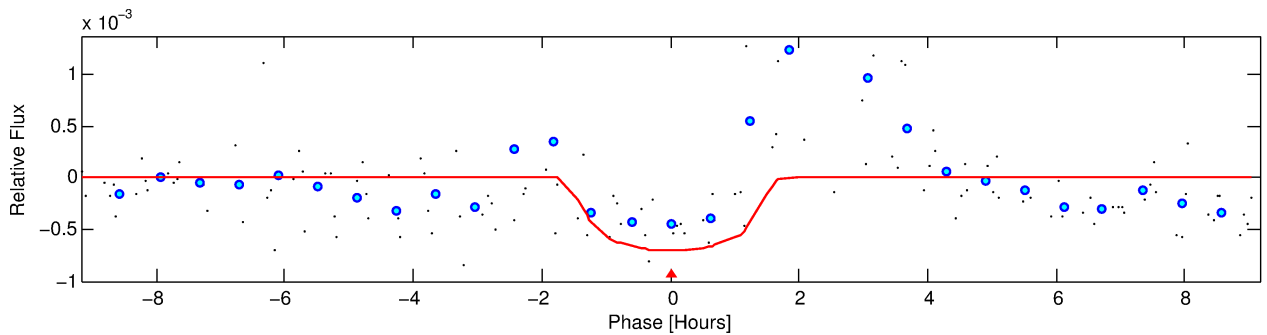
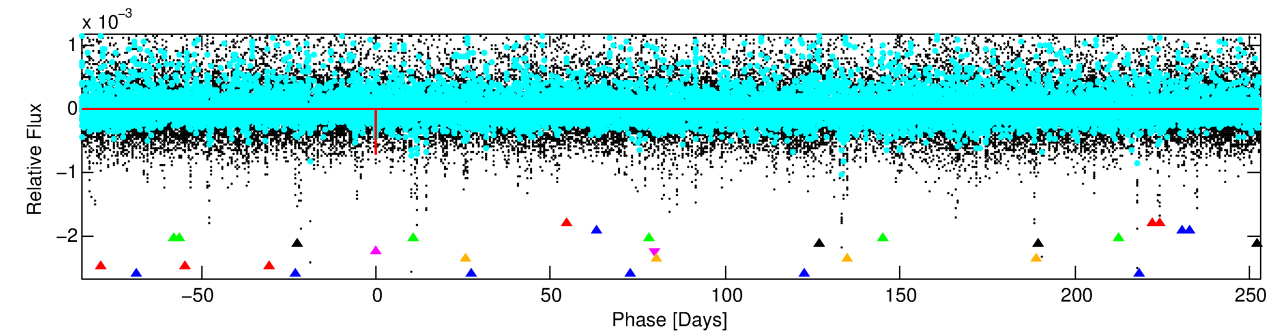
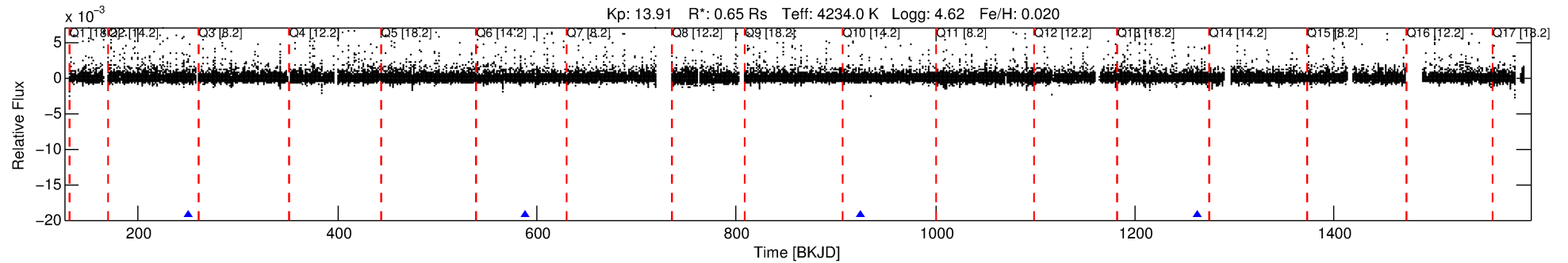
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009346592-05

No Significant Match Found

DV One-Page Summary

KIC: 9346592 Candidate: 5 of 8 Period: 337.335 d



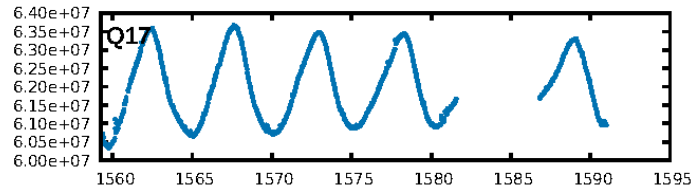
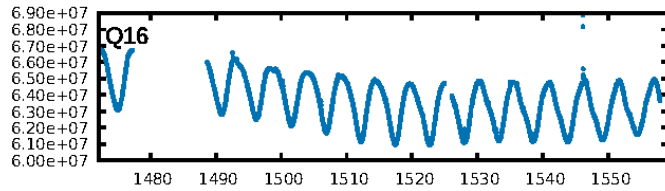
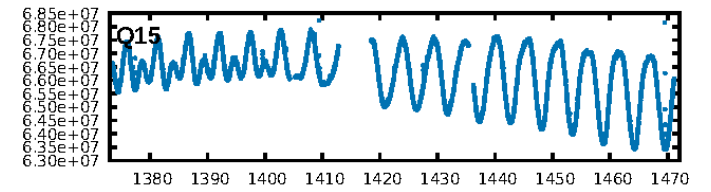
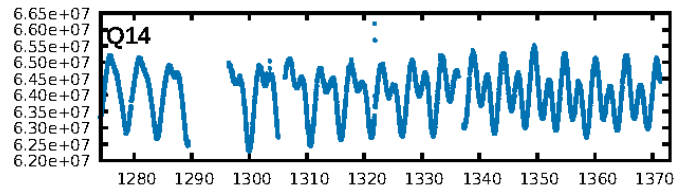
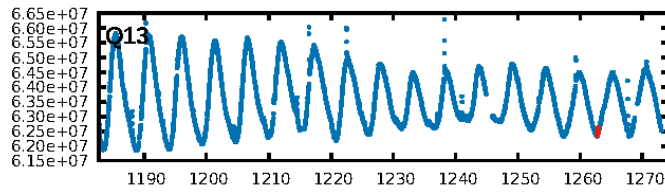
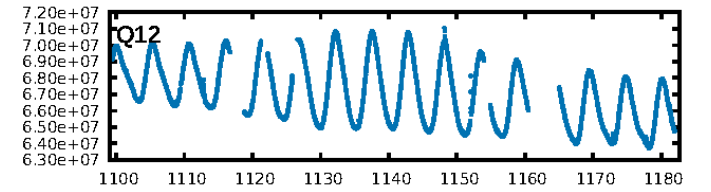
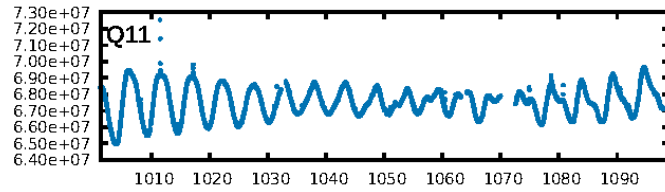
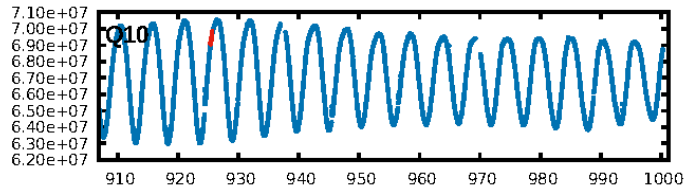
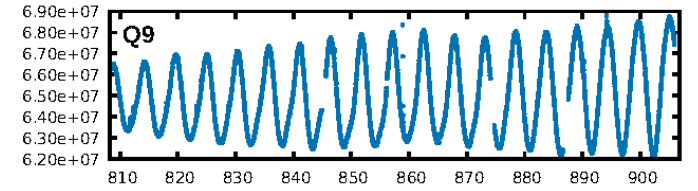
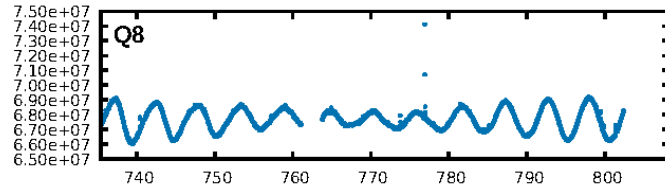
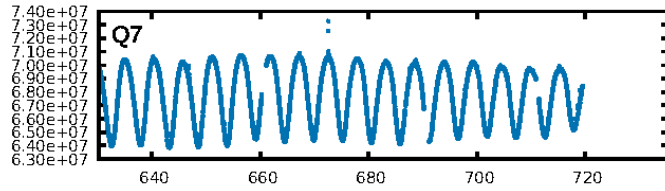
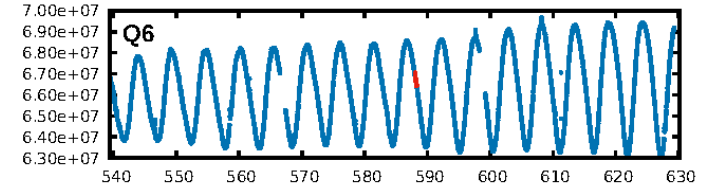
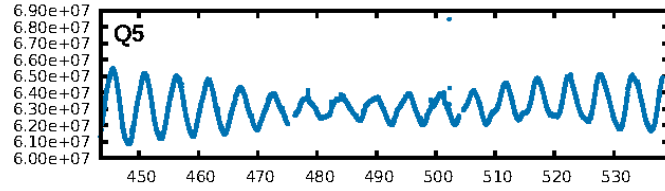
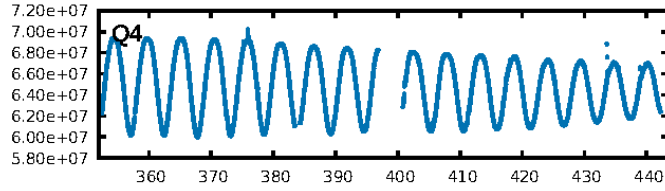
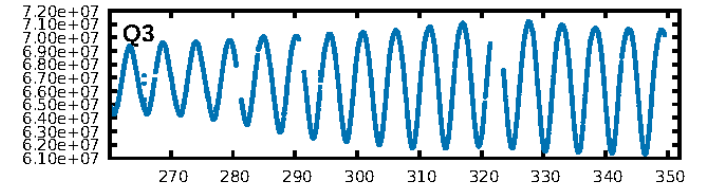
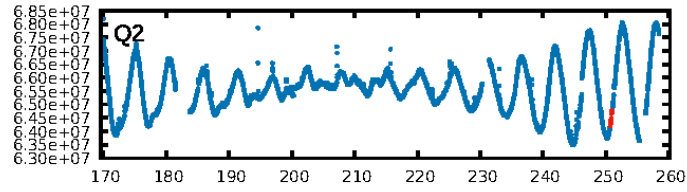
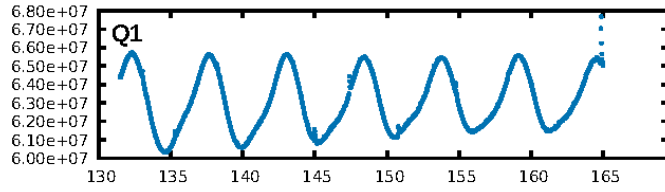
DV Fit Results:

Period = 337.33545 [0.00521] d
Epoch = 250.8244 [0.0099] BKJD
Rp/R* = 0.0268 [0.0438]
a/R* = 579.67 [3126.45]
b = 0.76 [3.04]
Seff = 0.18 [0.03]
Teq = 167 [7] K
Rp = 1.90 [3.12] Re
a = 0.8179 [0.0610] AU
Ag = 59874.70 [196708.18] [0.30 σ]
Teffp = 4027 [3308] K [1.17 σ]

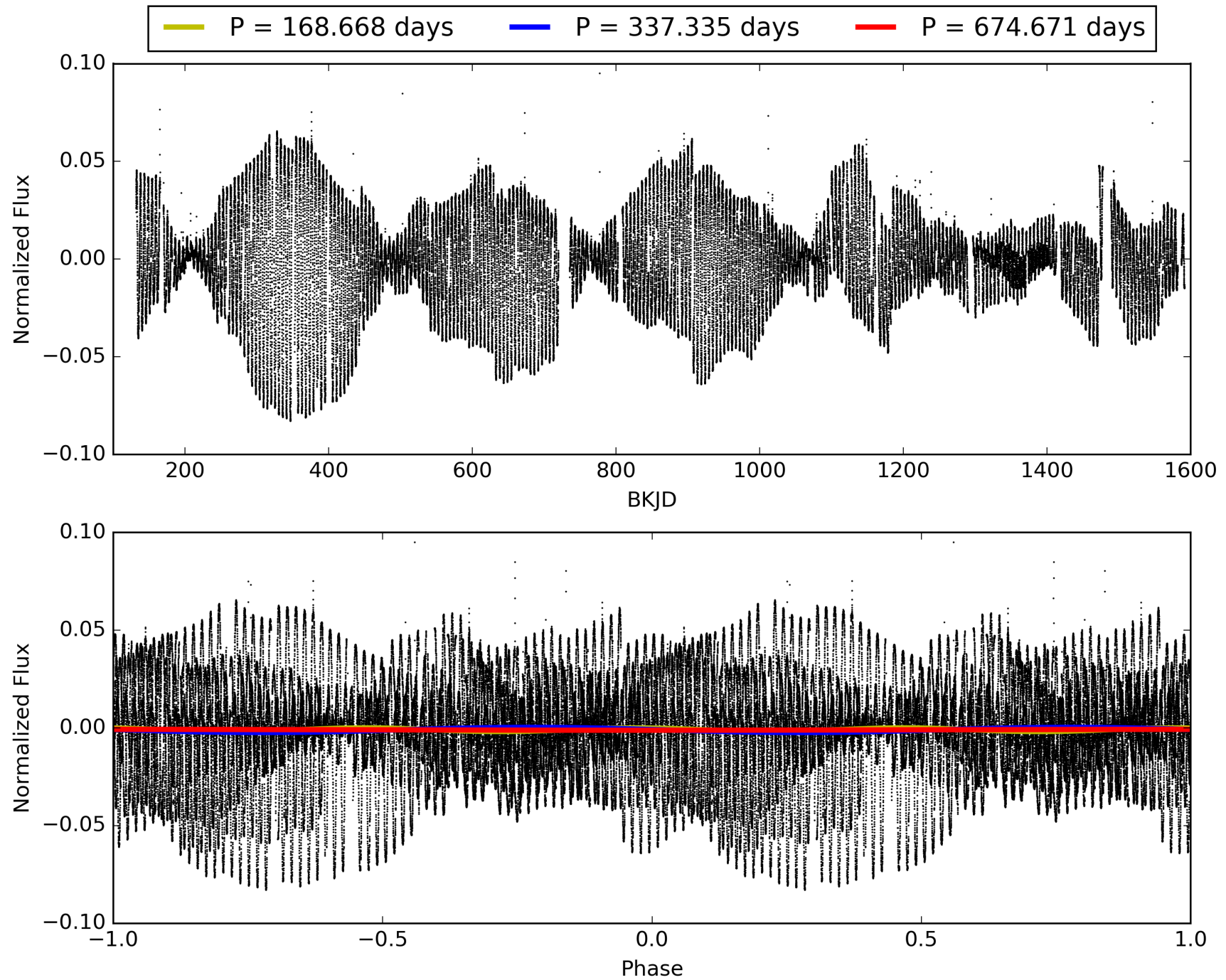
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [425.66 σ]
LongPeriod-sig: 100.0% [137.20 σ]
ModelChiSquare2-sig: 82.4%
ModelChiSquareGof-sig: 71.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.322
Centroid-sig: 5.9%
Centroid-so: 2.303 arcsec [0.42 σ]
OotOffset-rm: 0.543 arcsec [1.34 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-rm: 0.273 arcsec [1.49 σ]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 009346592-05, PDC Light Curves

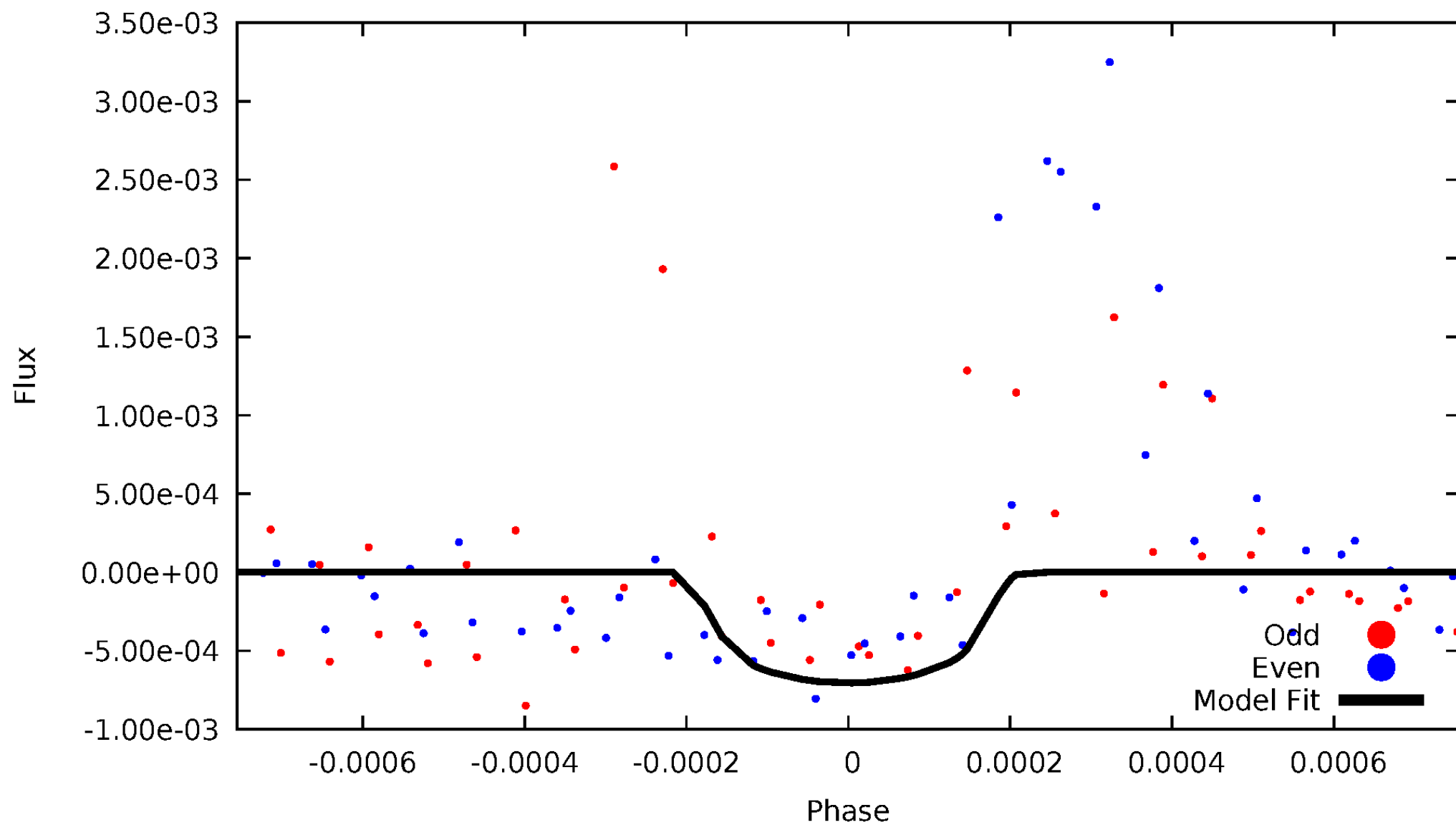


TCE 009346592-05



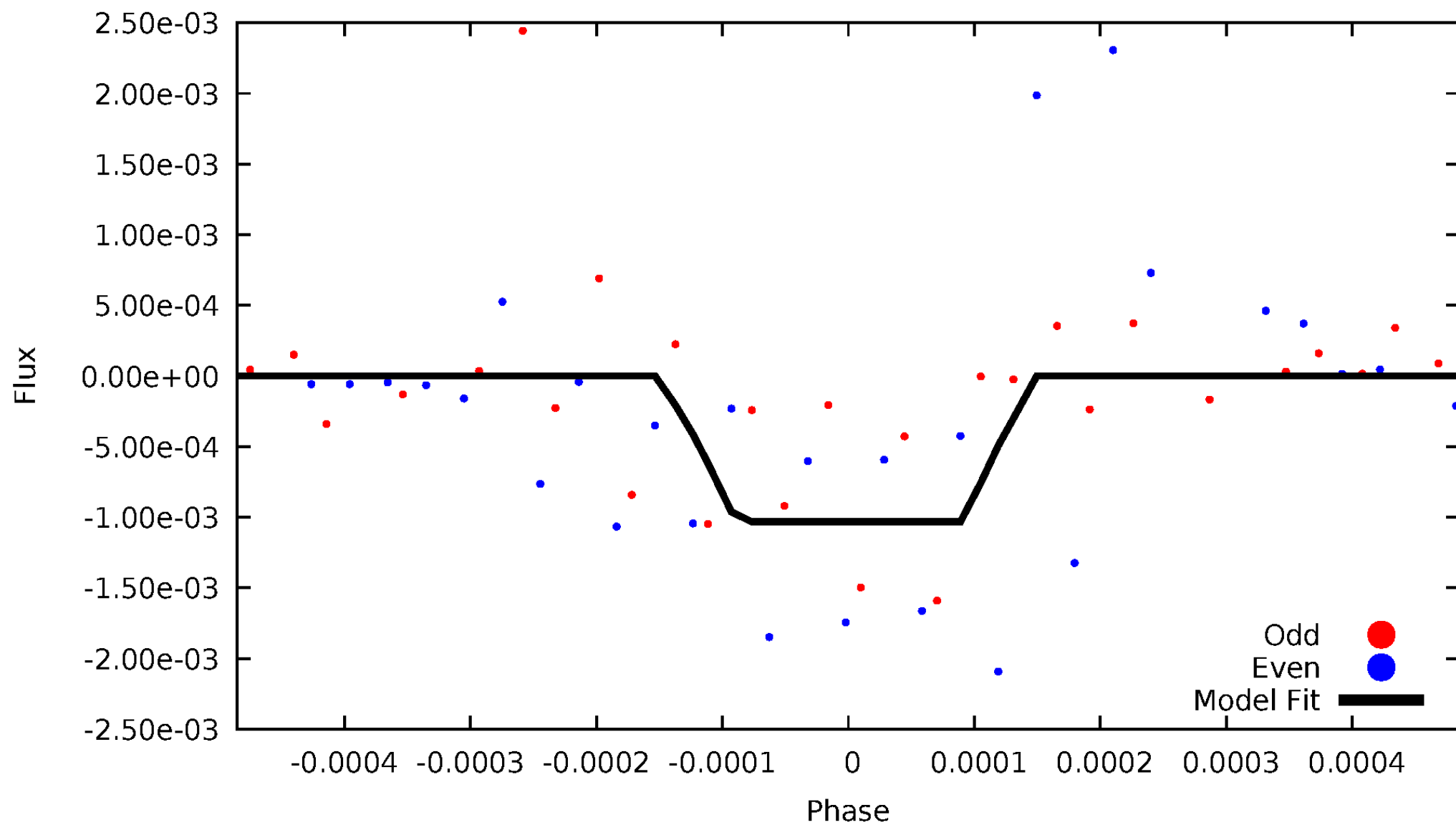
DV Odd/Even

TCE 009346592-05



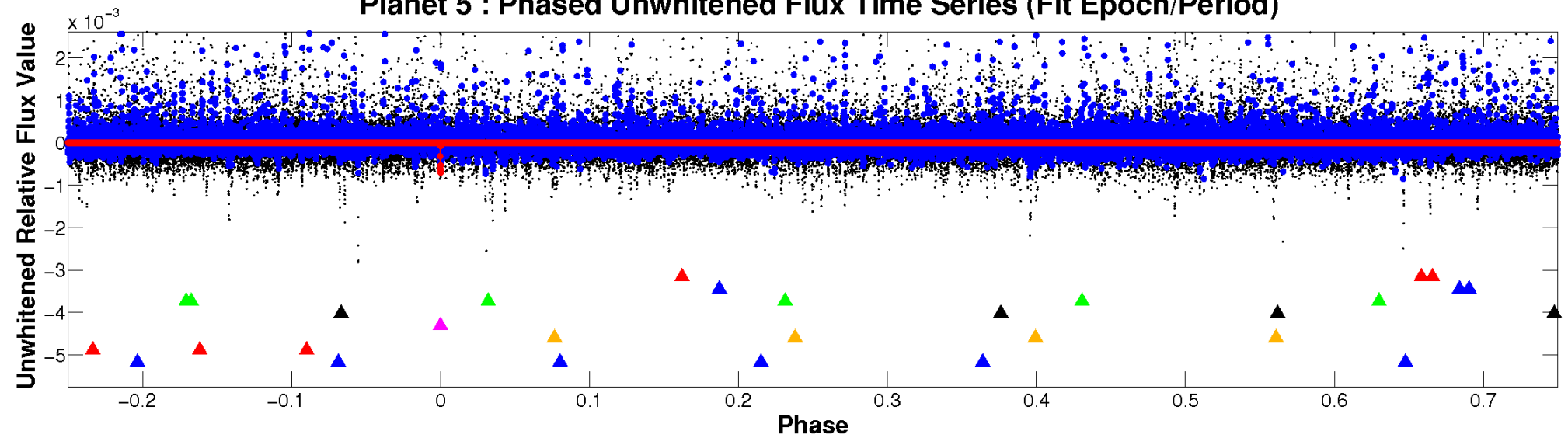
ALT Odd/Even

TCE 009346592-05

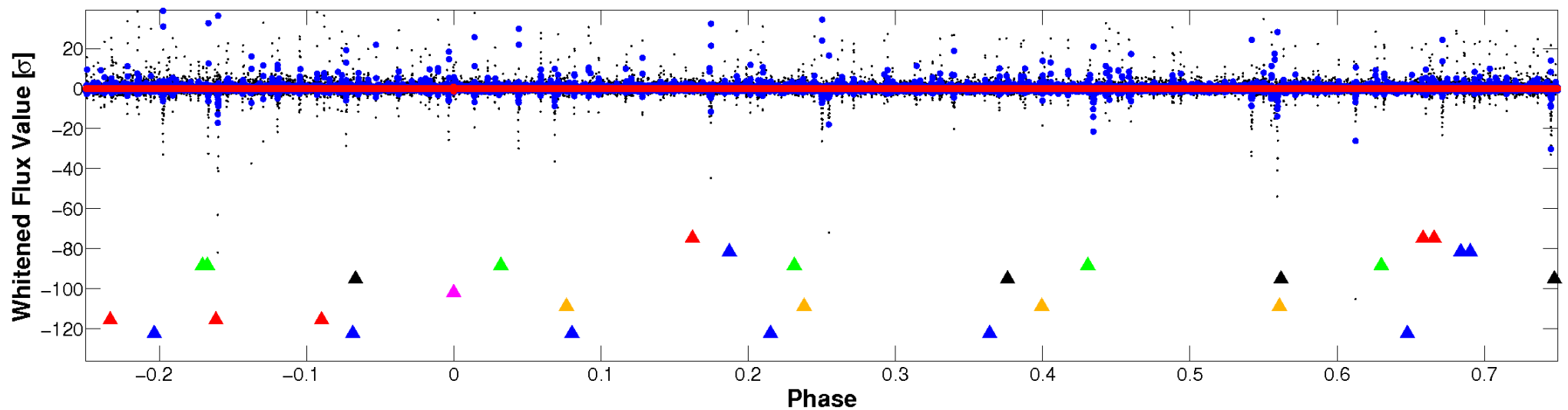


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

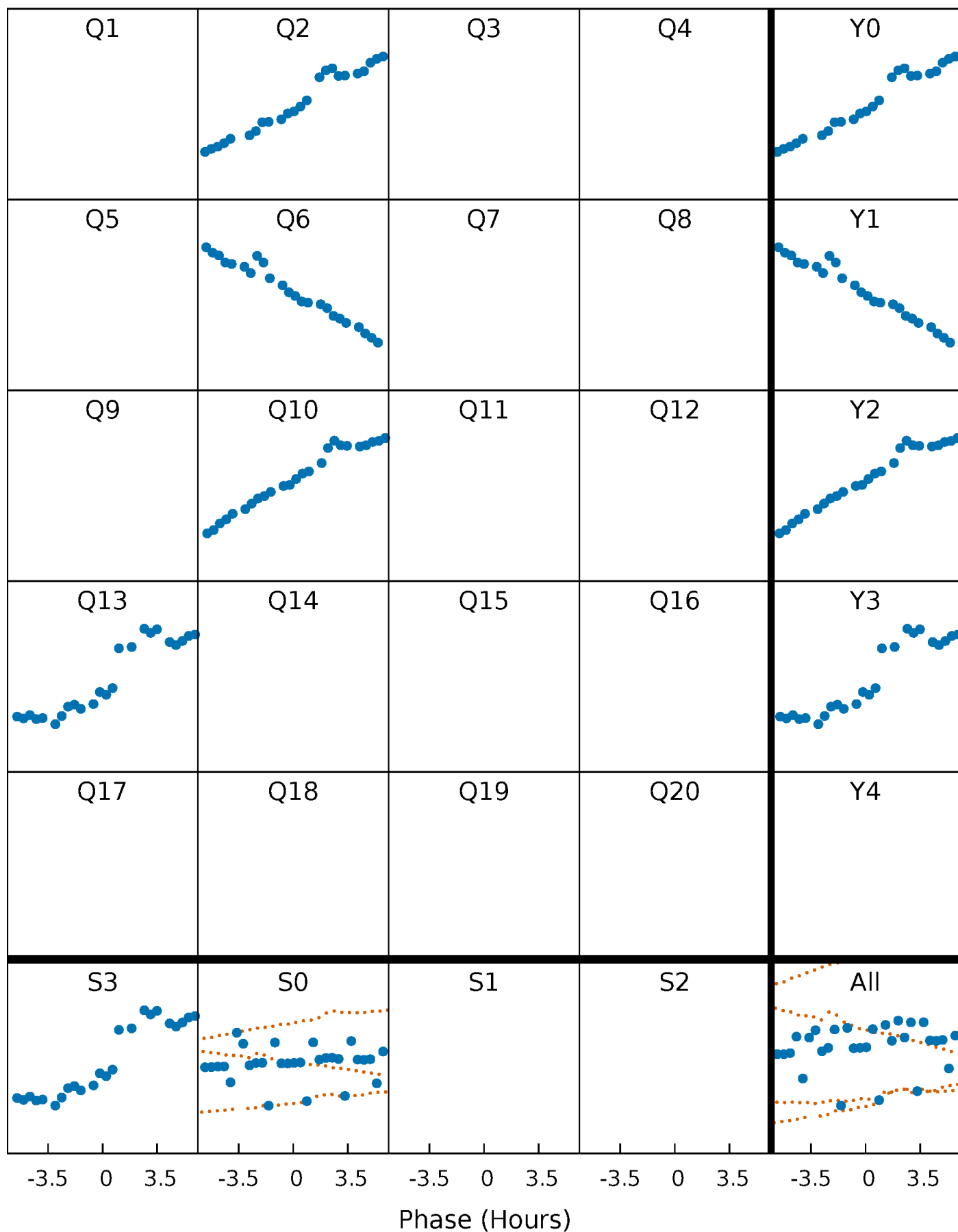


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



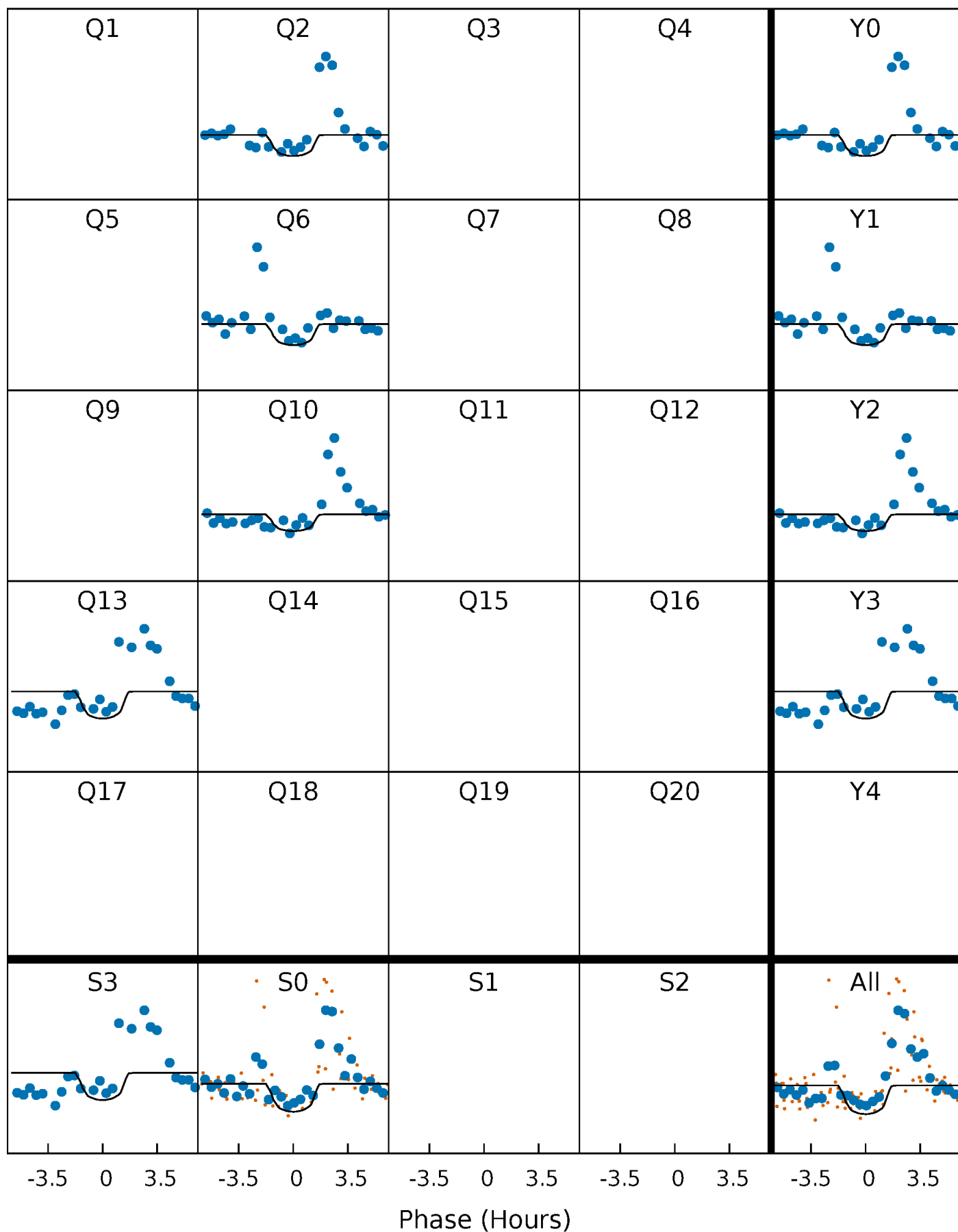
PDC Quarter-Phased Transit Curves

TCE 009346592-05 $P=337.335446$ Days $T_0=250.824416$ (BKJD)



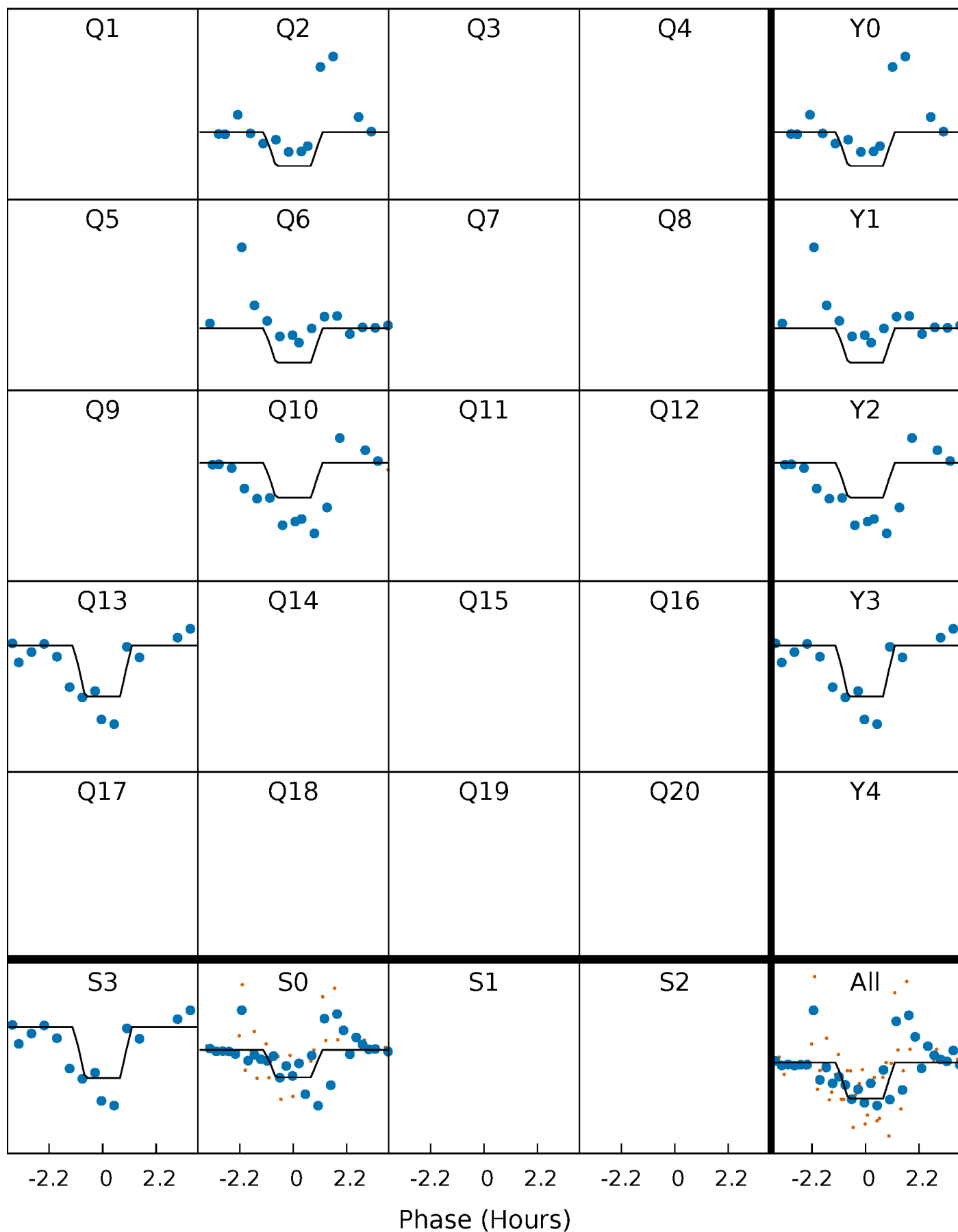
DV Quarter-Phased Transit Curves

TCE 009346592-05 $P=337.335446$ Days $T_0=250.824416$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

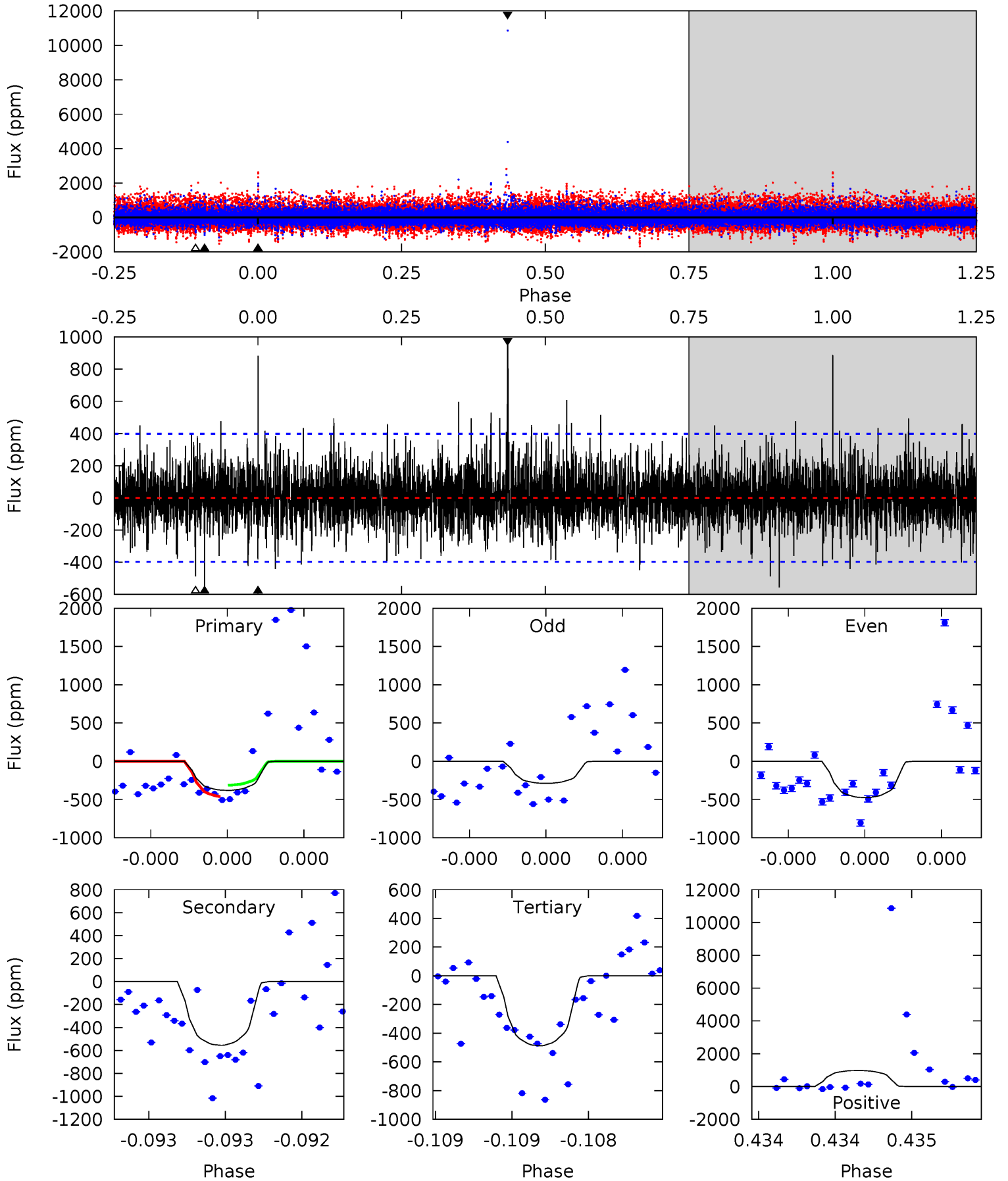
TCE 009346592-05 P=337.333180 Days $T_0=250.836507$ (BKJD)



DV Model-Shift Uniqueness Test

009346592-05, P = 337.335446 Days, E = 250.824416 Days

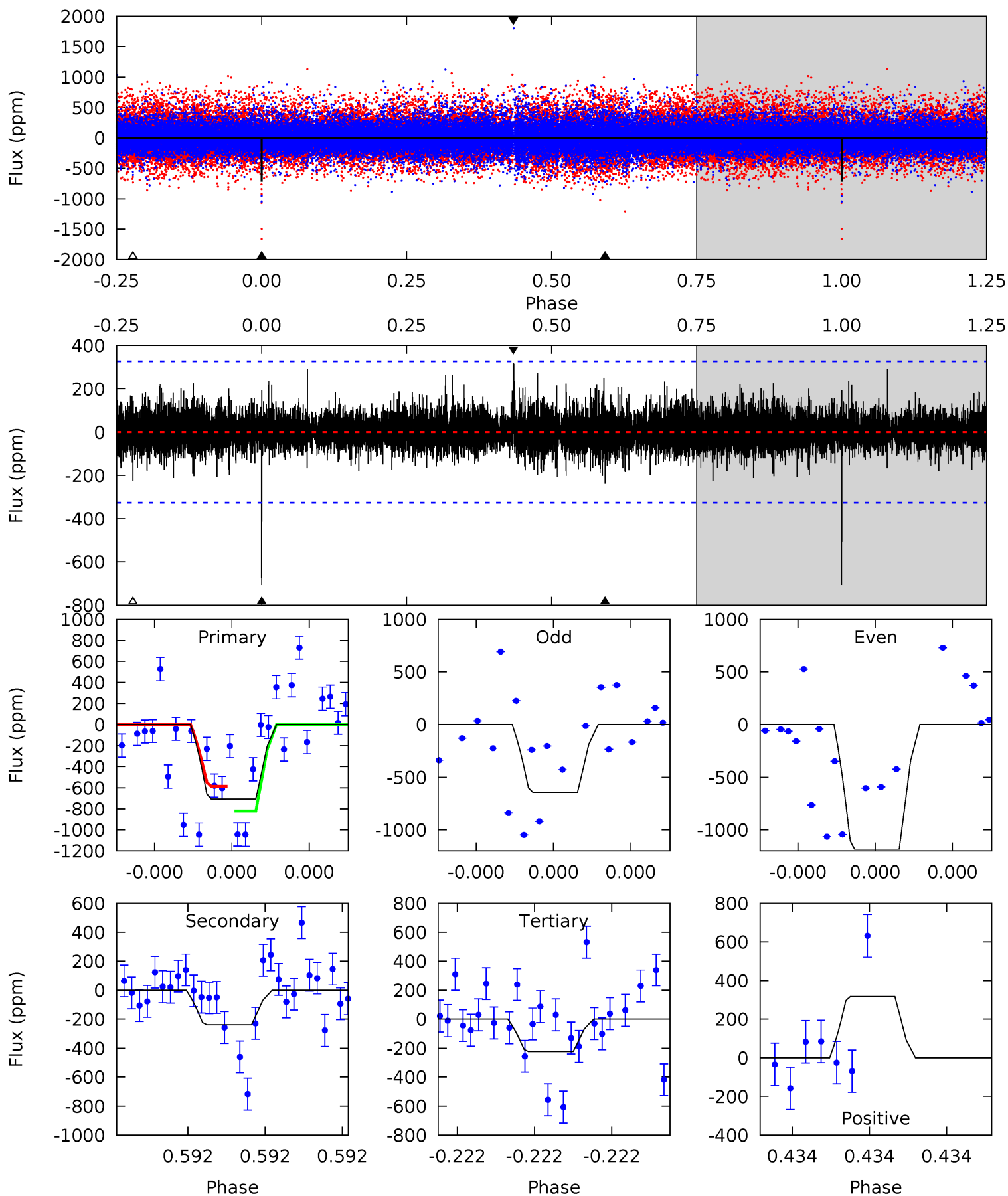
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.38	7.84	6.89	13.8	5.62	3.55	1.67	-1.51	-8.42	0.95	-5.96	1.12	0.97	0.64	1.06



Alt Model-Shift Uniqueness Test

009346592-05, P = 337.333180 Days, E = 250.836507 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	4.15	3.88	5.50	5.67	3.63	0.93	8.36	6.74	0.26	-1.36	4.78	1.10	0.31	0



Stellar Parameters For KIC 009346592

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4234^{+128}_{-128}	$4.619^{+0.053}_{-0.018}$	$0.020^{+0.250}_{-0.300}$	$0.650^{+0.036}_{-0.061}$	$0.640^{+0.056}_{-0.056}$	$3.283^{+0.769}_{-0.283}$
	+3%/-3%	+1%/-0%	+1250%/-1500%	+6%/-9%	+9%/-9%	+23%/-9%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009346592-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-556 ± 71	$2.94^{+2.57}_{-1.90}$	231^{+7}_{-8}	3472^{+1621}_{-579}	$23103^{+173417}_{-16307}$
Alt.	-239 ± 58	$3.14^{+2.61}_{-2.10}$	231^{+8}_{-8}	2989^{+1183}_{-441}	8498^{+60355}_{-5966}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

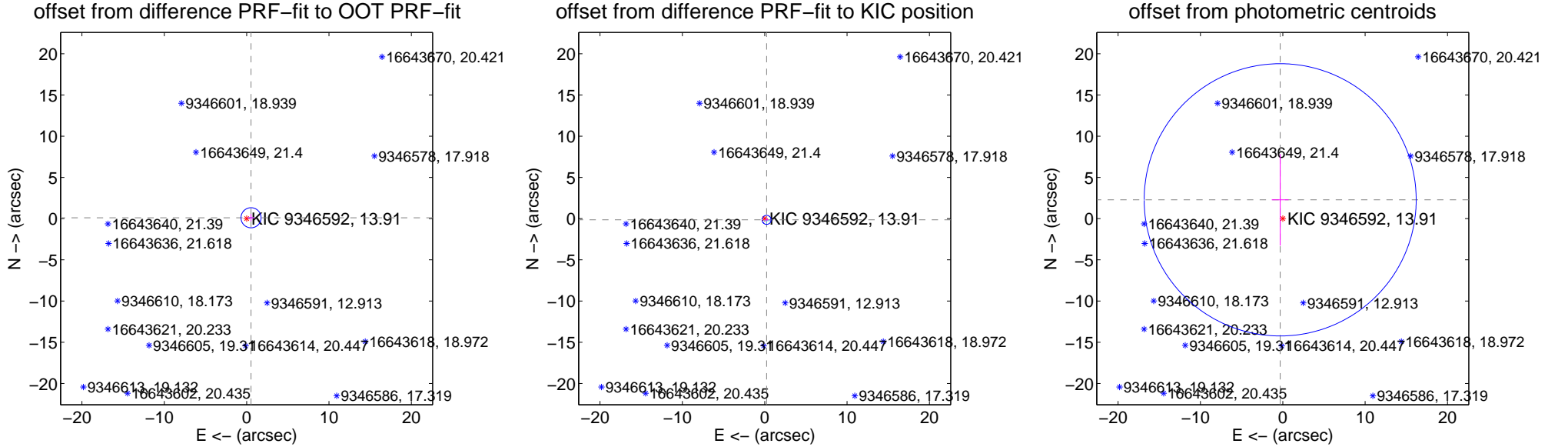
DV Centroid Data

Supplemental centroid analysis for 009346592-05. Kepler magnitude: 13.91. Transit SNR 6.36

There are 2 quarters with good PRF difference image offsets

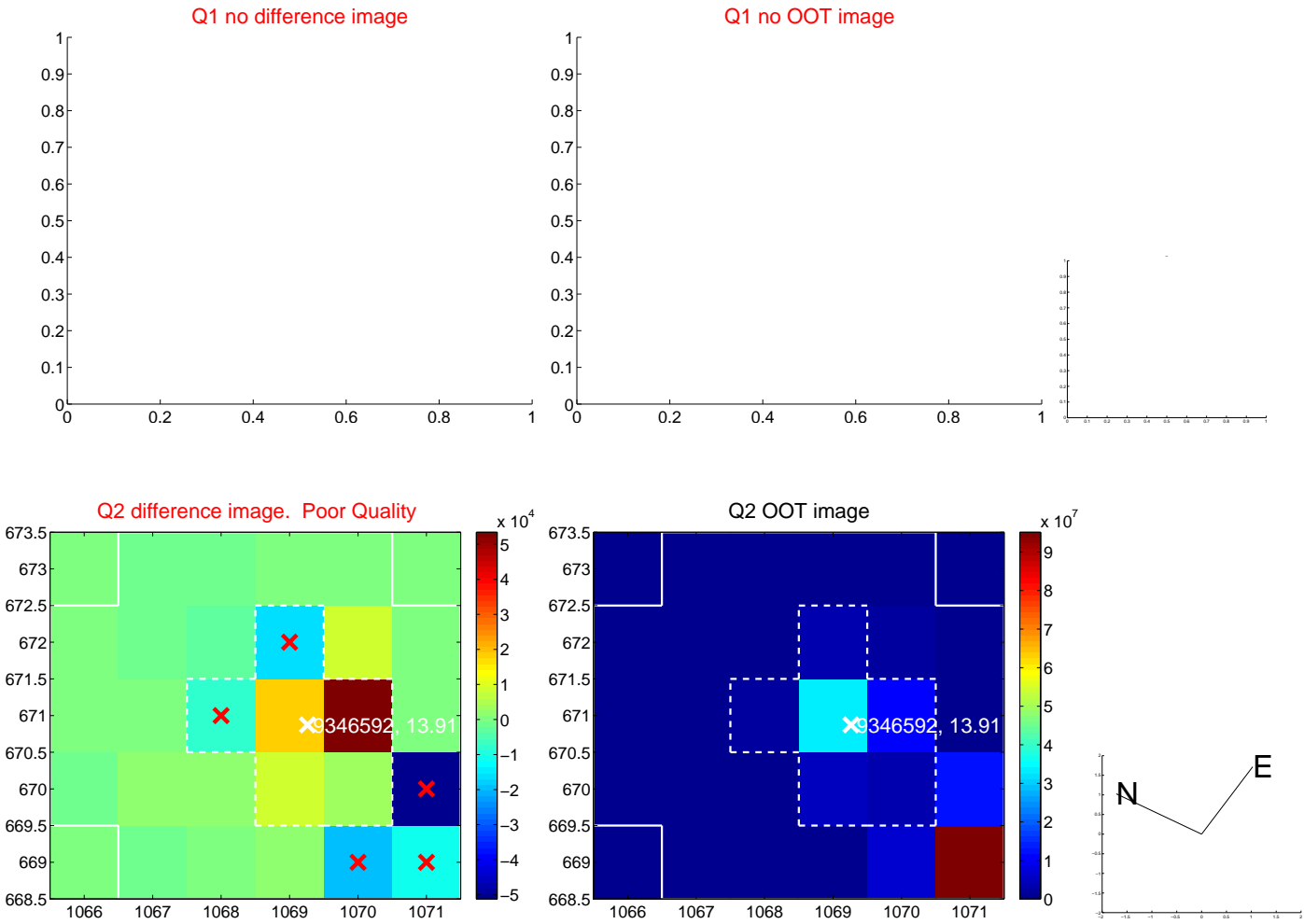
The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.543 ± 0.407	1.34	-0.532 ± 0.405	0.106 ± 0.433
PRF-fit source offset from KIC position	0.273 ± 0.183	1.49	-0.229 ± 0.199	-0.149 ± 0.136
photometric centroid source offset	2.30 ± 5.50	0.42	0.32 ± 1.03	2.28 ± 5.56

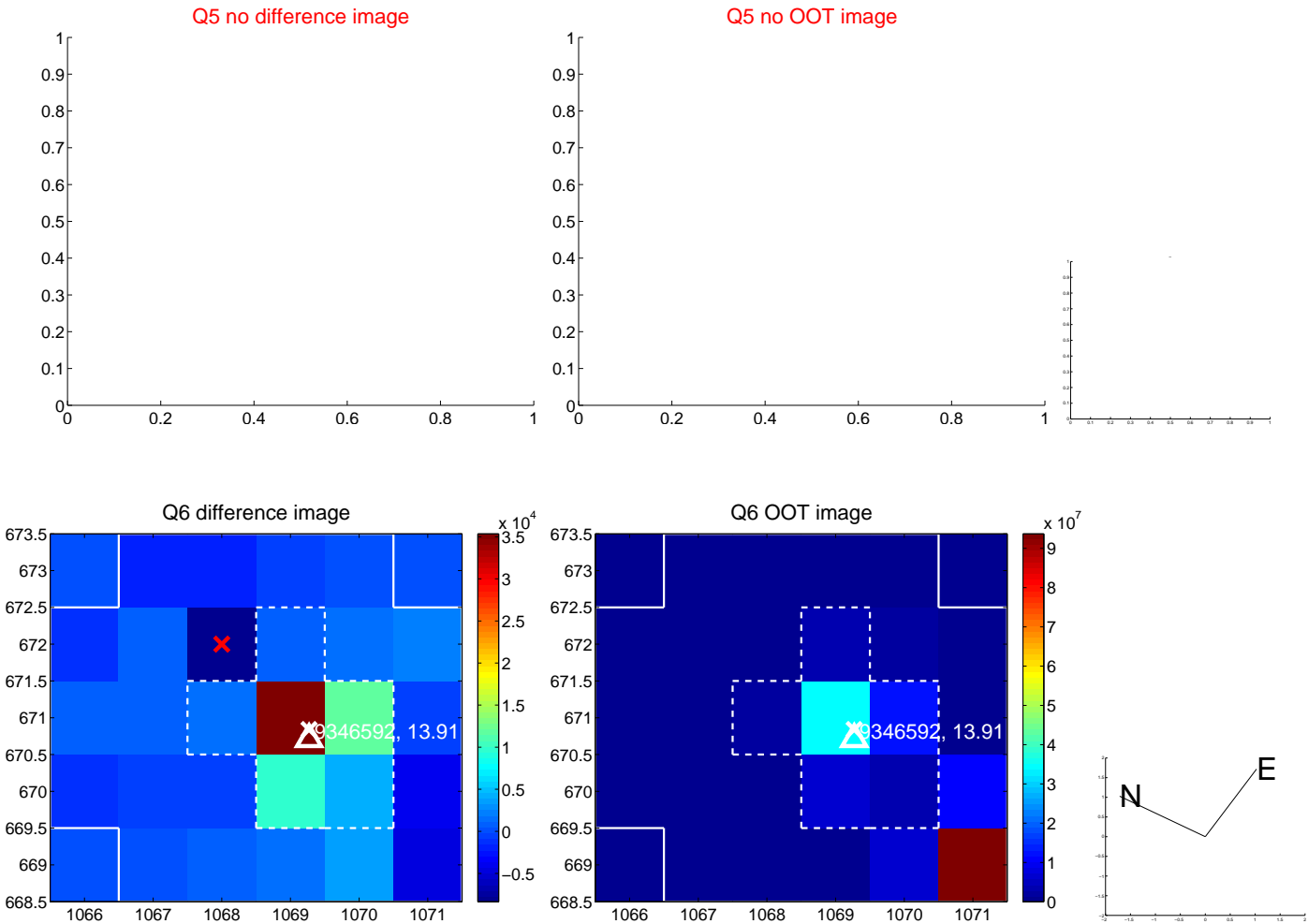


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

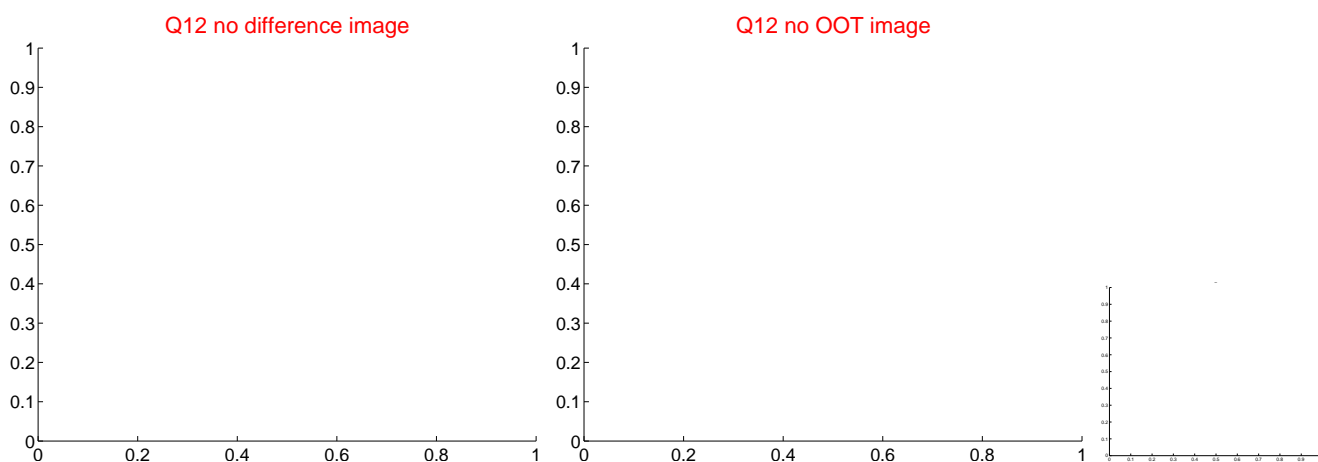
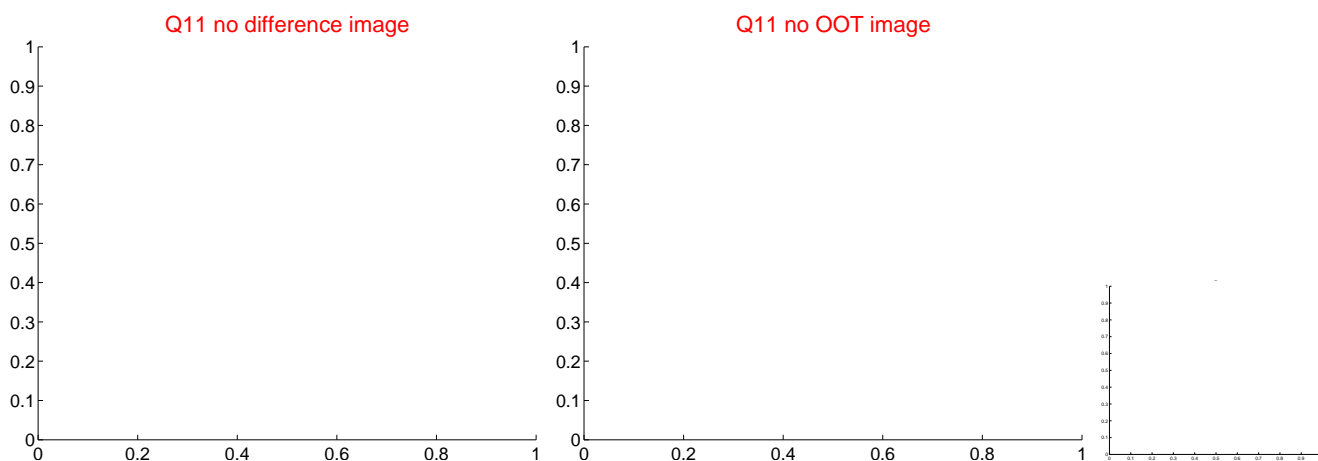
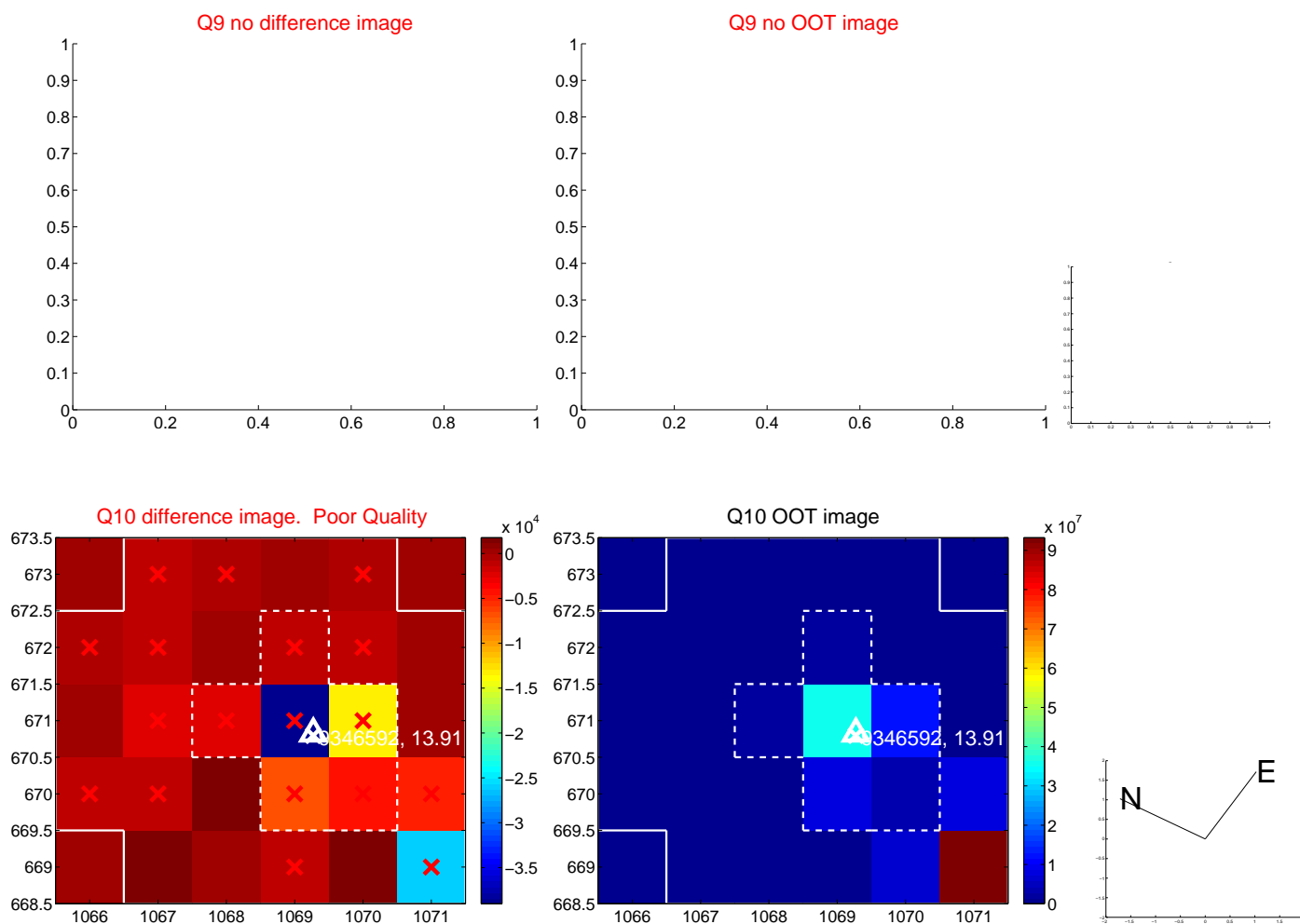
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



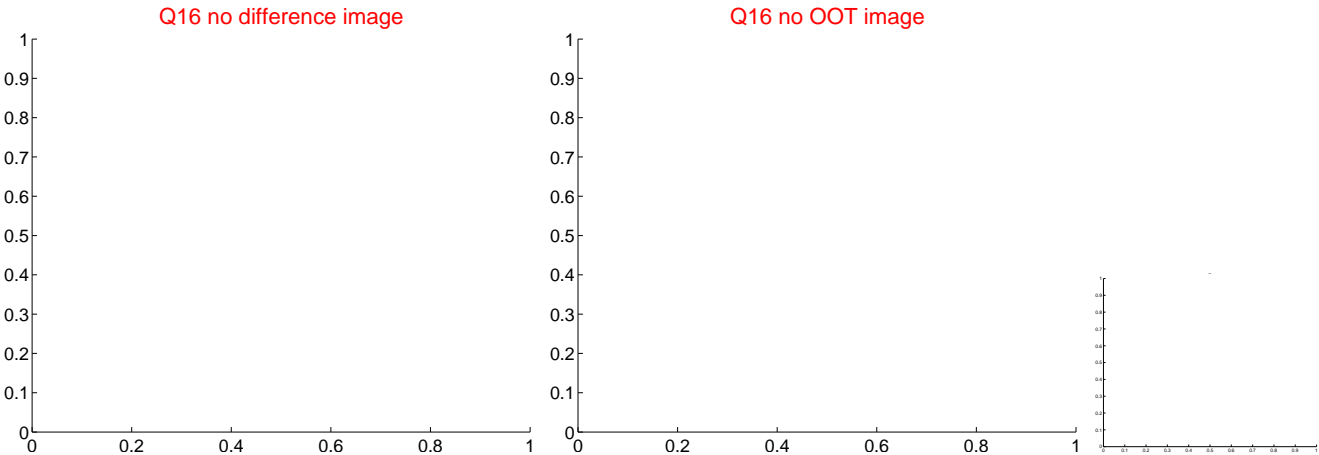
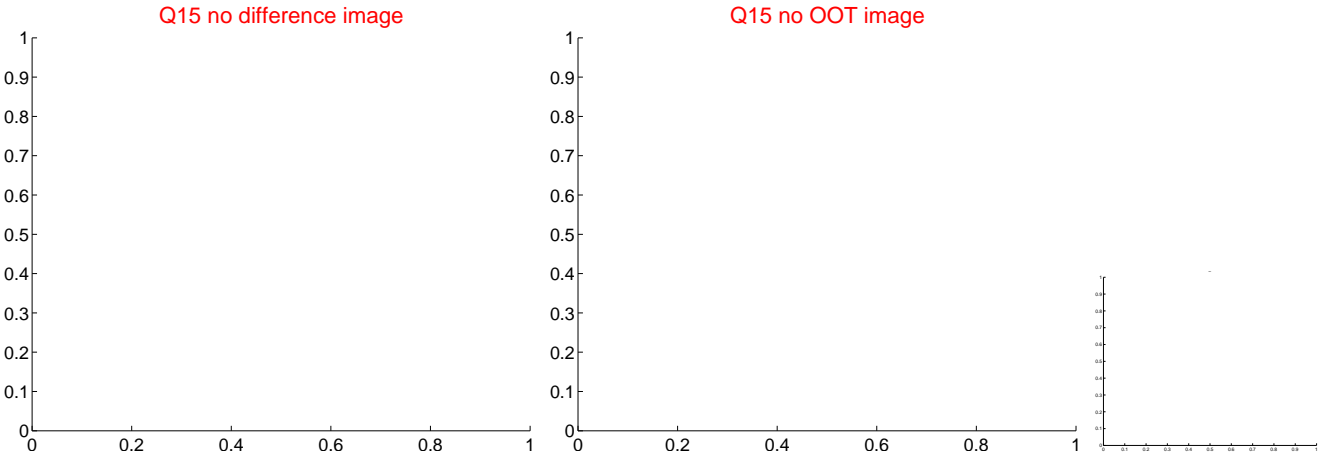
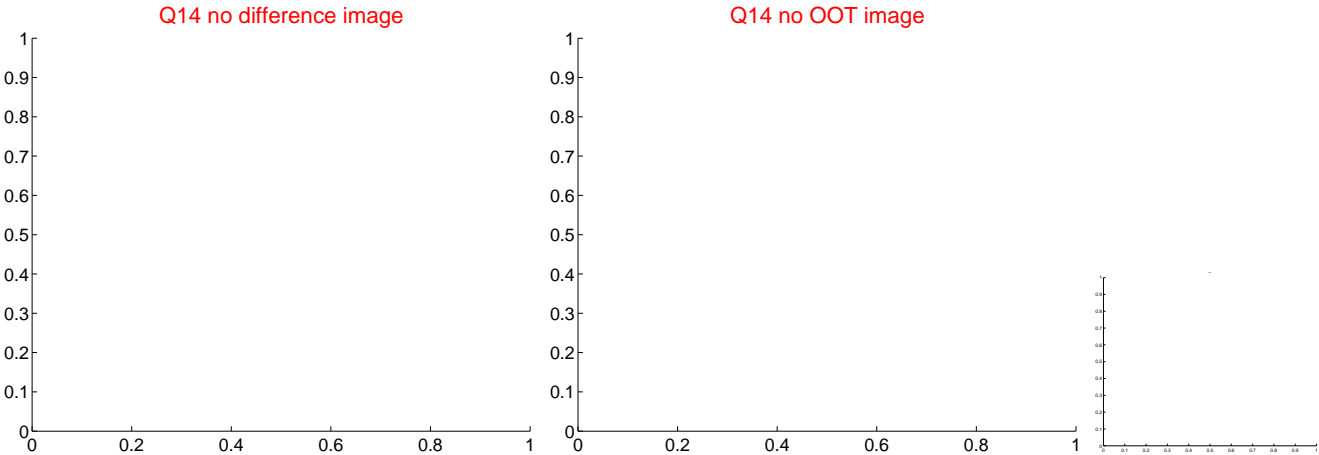
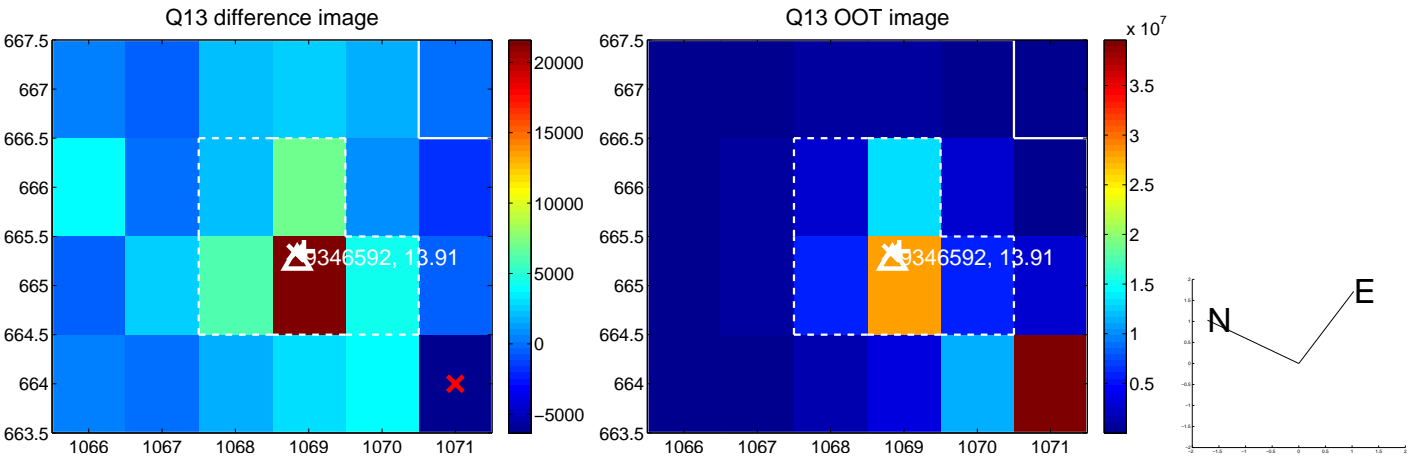
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



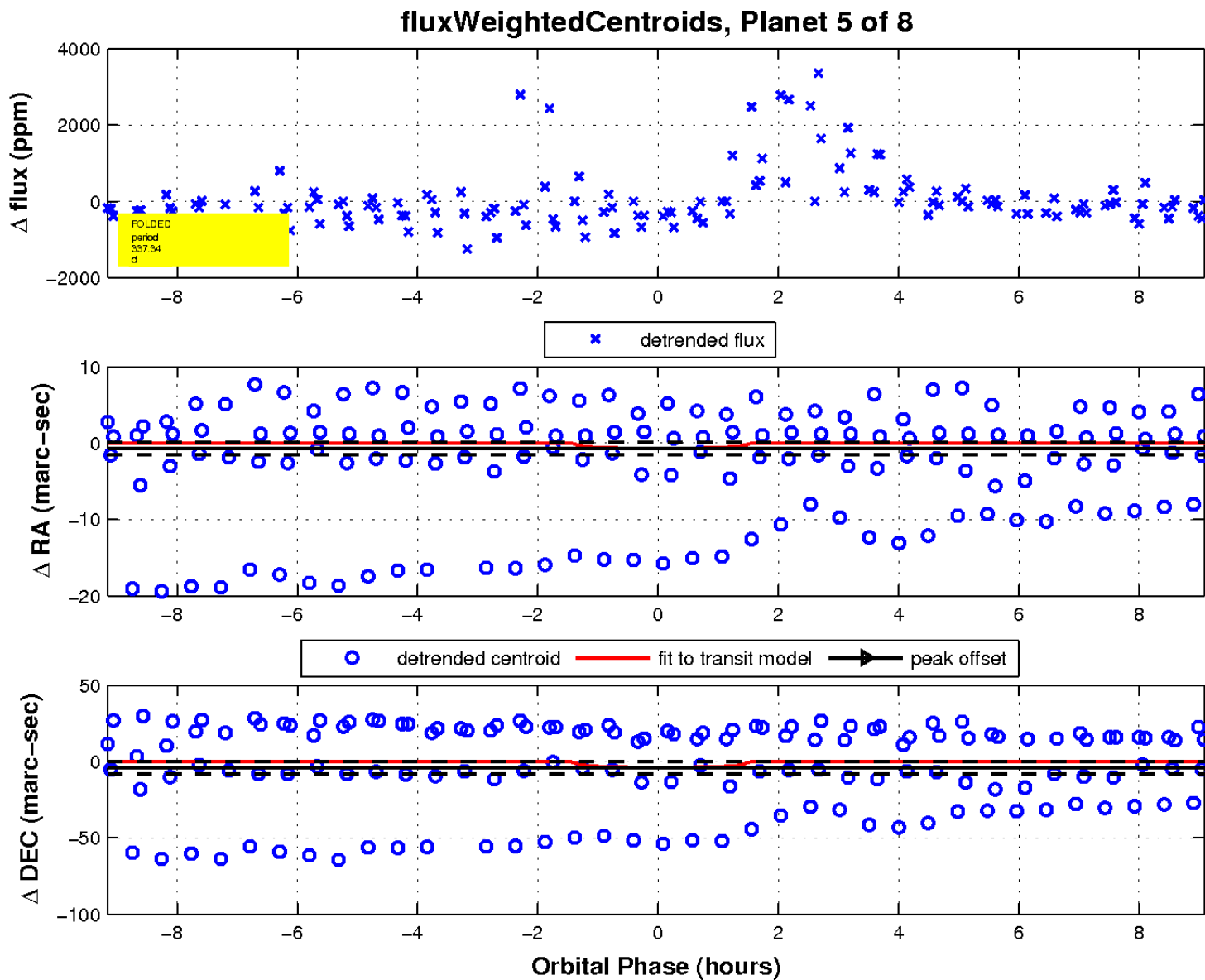
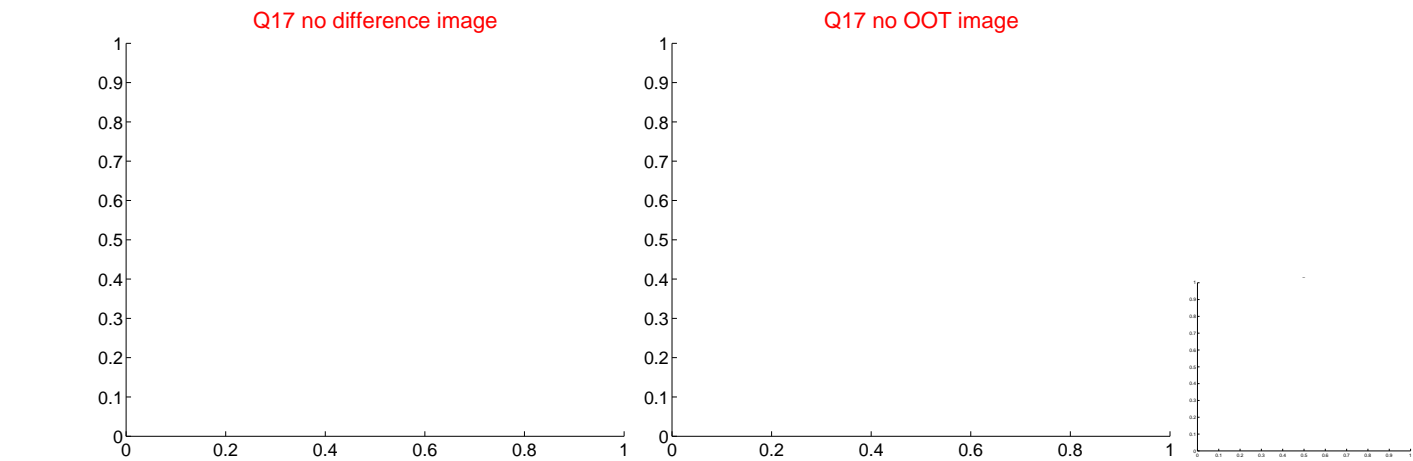
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

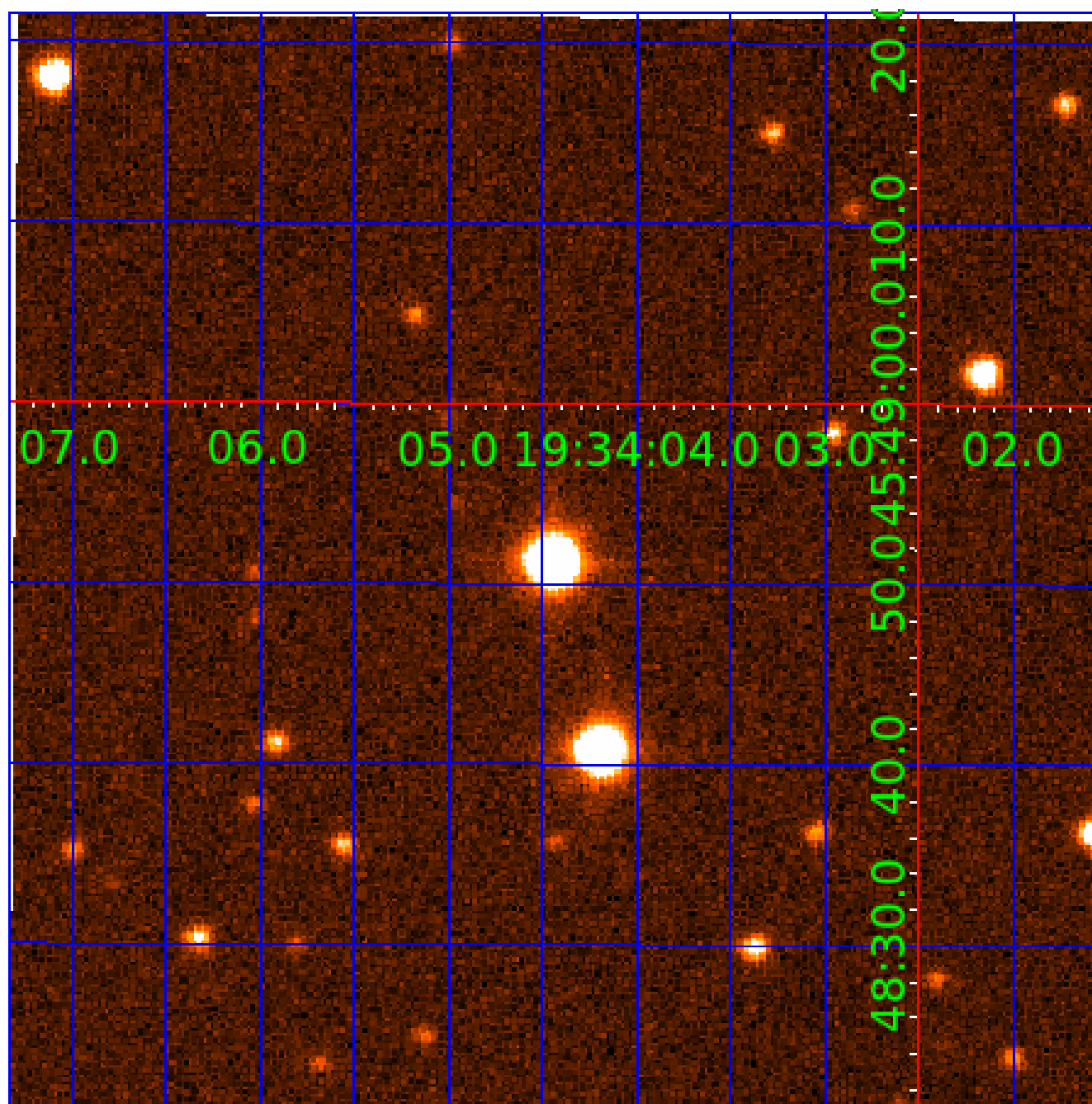


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009346592

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
009346592-01	OBS	No	504.746735	138.109841	1012.8	4.708	15.4	6.5	0.65	4234	2.03	0.11
009346592-02	OBS	No	504.919794	483.729108	807.2	9.458	15.5	4.7	0.65	4234	2.10	0.11
009346592-03	OBS	No	270.092408	193.258862	925.8	2.243	14.3	7.8	0.65	4234	2.37	0.24
009346592-04	OBS	No	399.981133	377.728840	639.9	3.920	13.7	5.3	0.65	4234	1.87	0.14
009346592-05	OBS	No	337.335446	250.824416	705.3	3.057	13.7	6.4	0.65	4234	1.90	0.18
009346592-06	OBS	No	391.787932	276.655756	742.4	9.022	12.7	4.8	0.65	4234	1.78	0.15
009346592-07	OBS	No	698.882333	172.118387	1119.5	7.401	13.9	7.3	0.65	4234	2.25	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009346592-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009346592-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS
009346592-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
009346592-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009346592-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009346592-06	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009346592-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

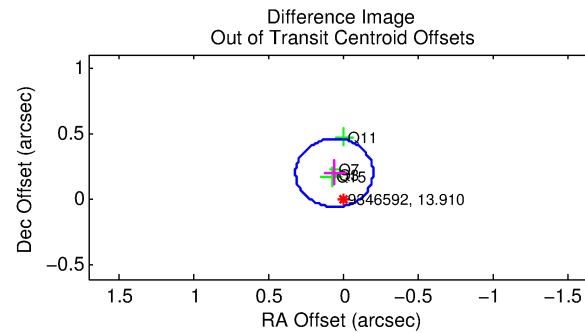
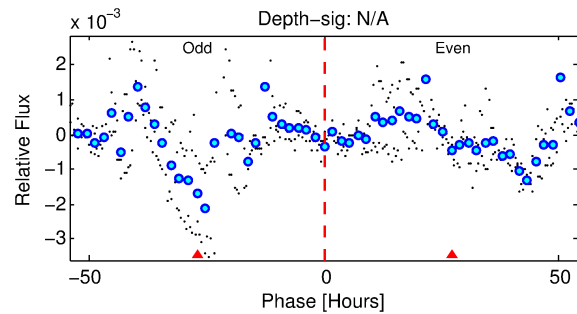
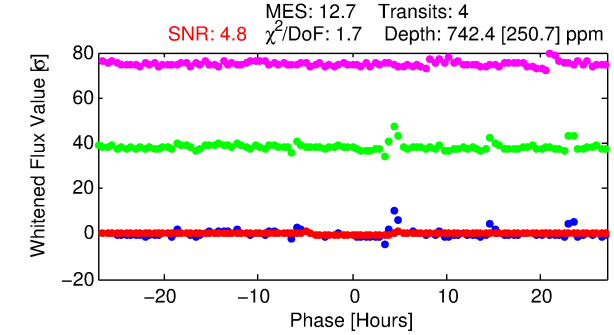
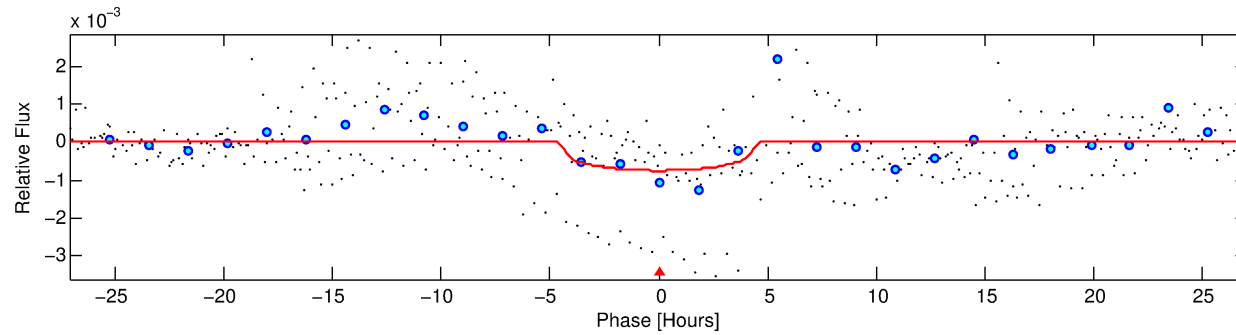
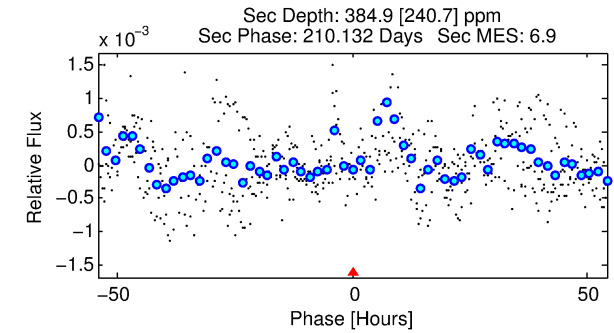
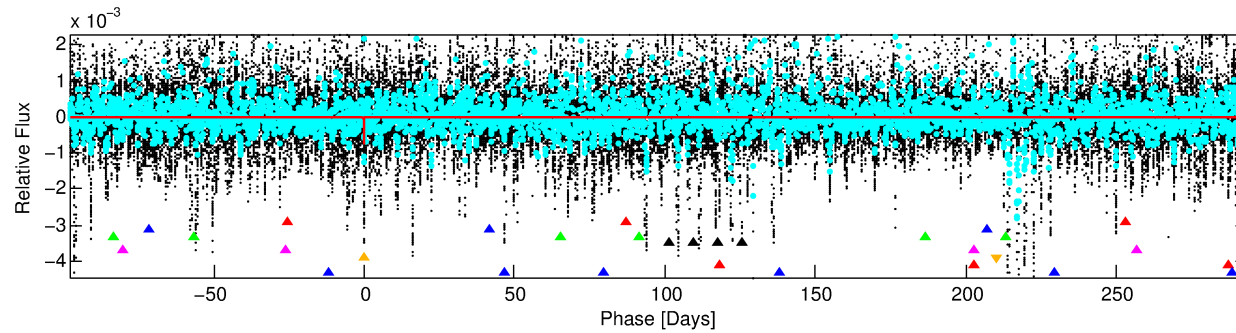
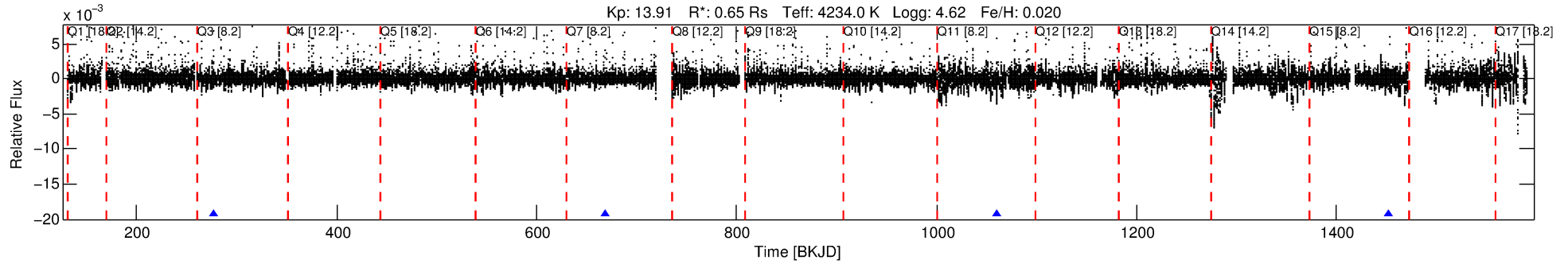
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009346592-06

No Significant Match Found

DV One-Page Summary

KIC: 9346592 Candidate: 6 of 8 Period: 391.788 d



DV Fit Results:

Period = 391.78793 [0.00833] d
Epoch = 276.6558 [0.0158] BKJD
Rp/R* = 0.0250 [0.0252]
a/R* = 296.77 [934.25]
b = 0.50 [4.77]
Seff = 0.15 [0.02]
Teq = 158 [6] K
Rp = 1.78 [1.80] Re
a = 0.9037 [0.0674] AU
Ag = 54792.27 [115654.87] [0.47] σ
Teffp = 3747 [1978] K [1.81] σ

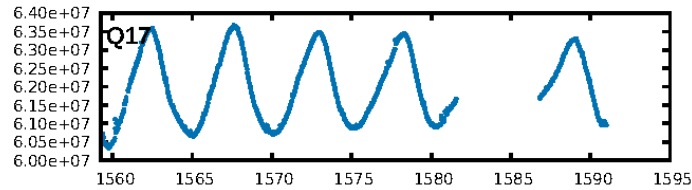
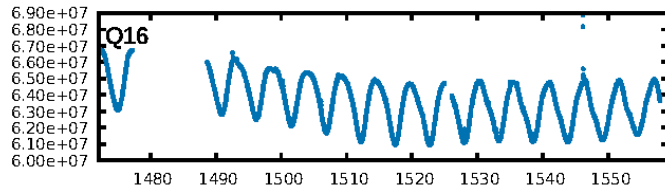
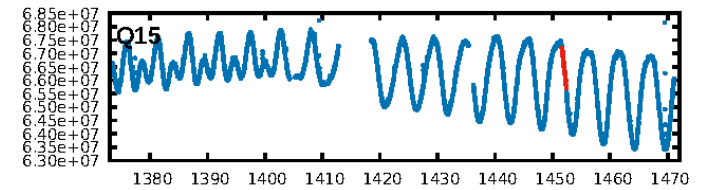
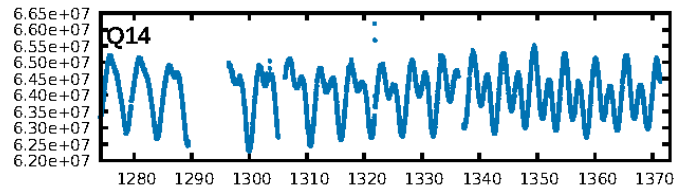
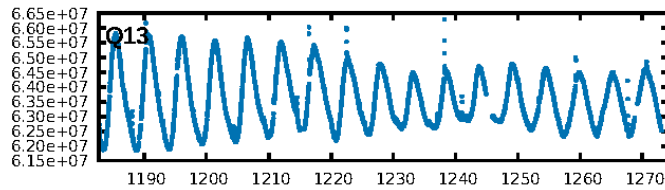
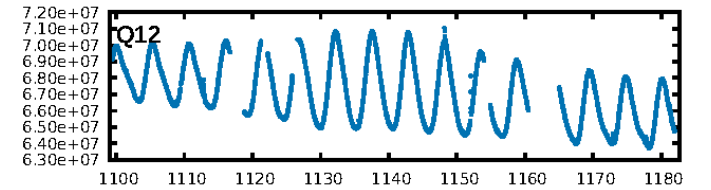
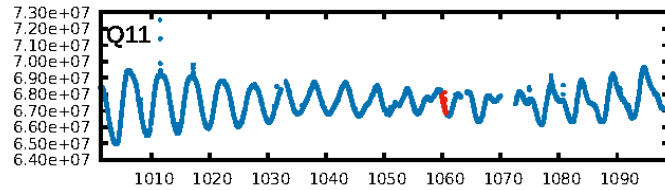
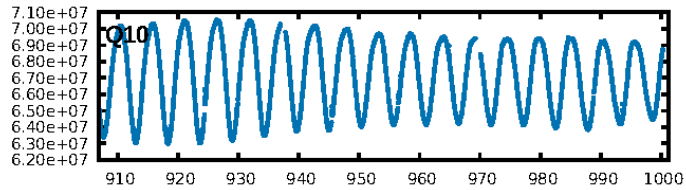
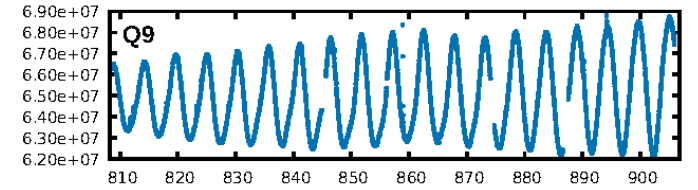
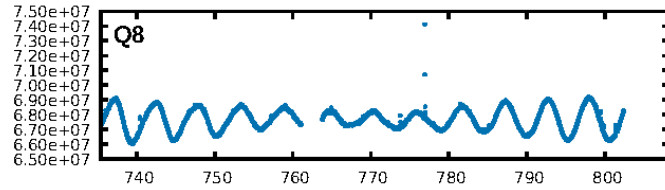
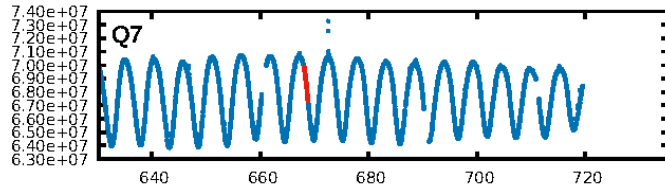
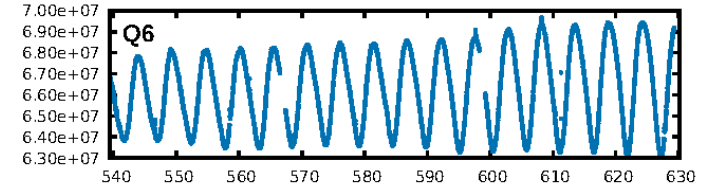
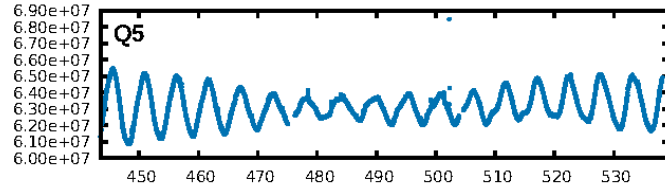
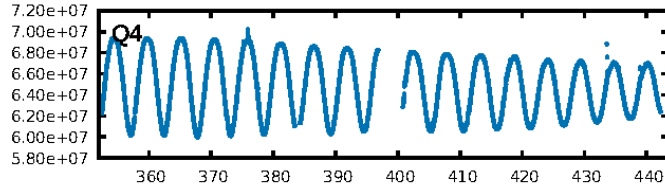
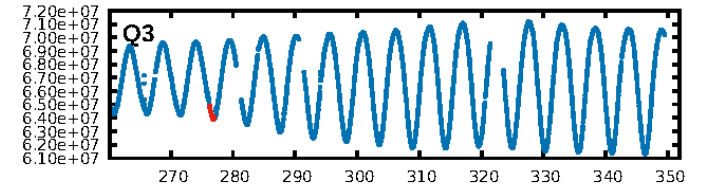
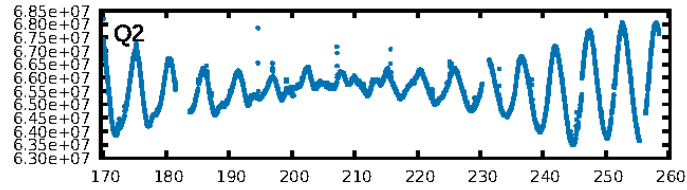
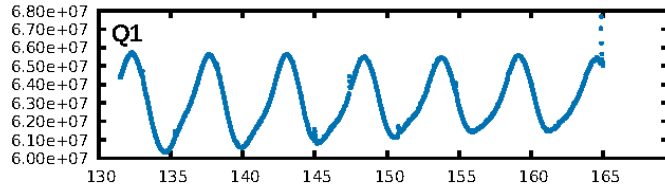
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [137.20] σ
LongPeriod-sig: 100.0% [19.99] σ
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 27.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.1345
Centroid-sig: 3.1%
Centroid-so: 2.322 arcsec [1.20] σ
OotOffset-rm: 0.211 arcsec [2.44] σ
OotOffset-st: 0/4/0/0 [4]
KicOffset-rm: 0.143 arcsec [1.58] σ
KicOffset-st: 0/4/0/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [4/4]

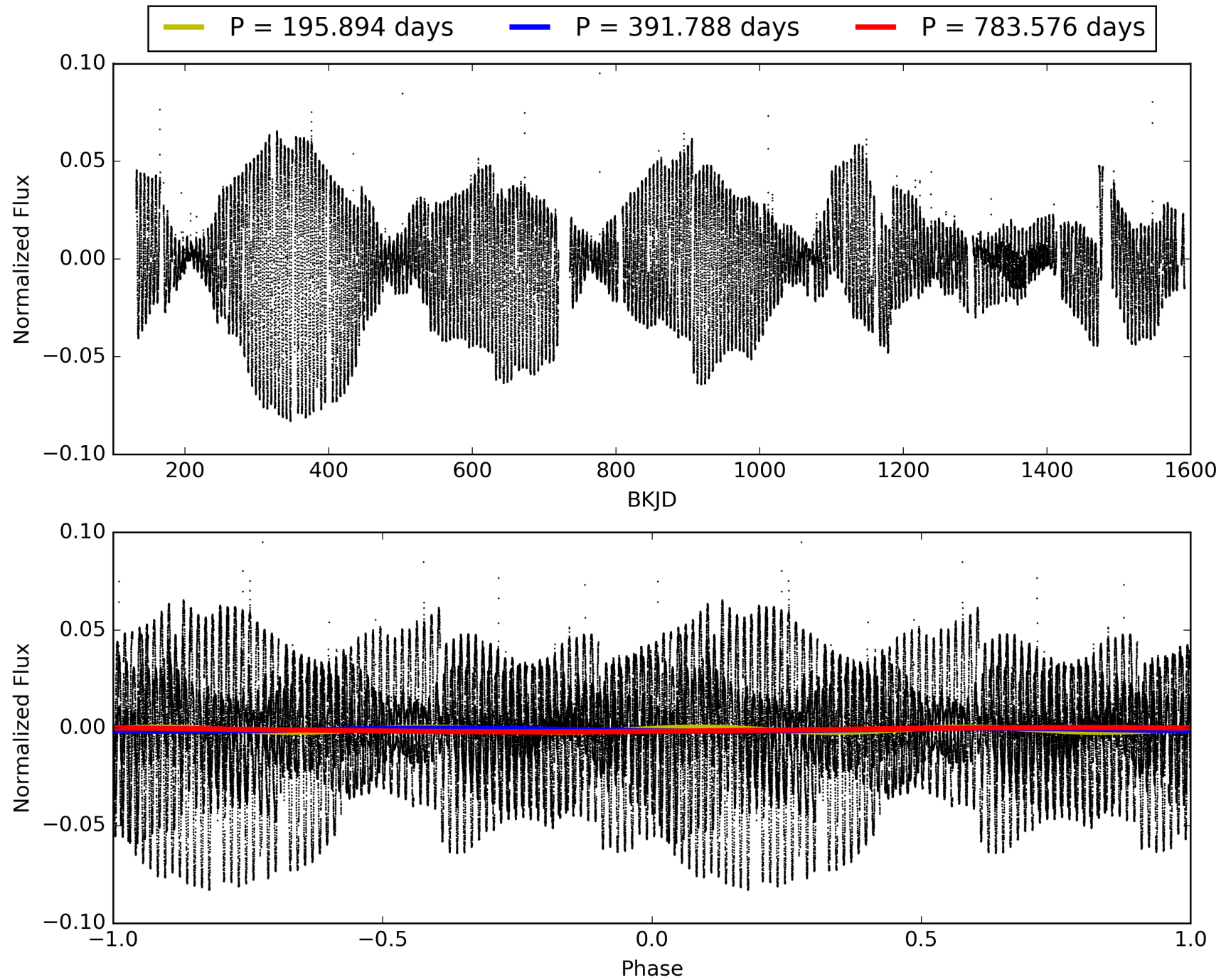
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:27:24 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009346592-06, PDC Light Curves

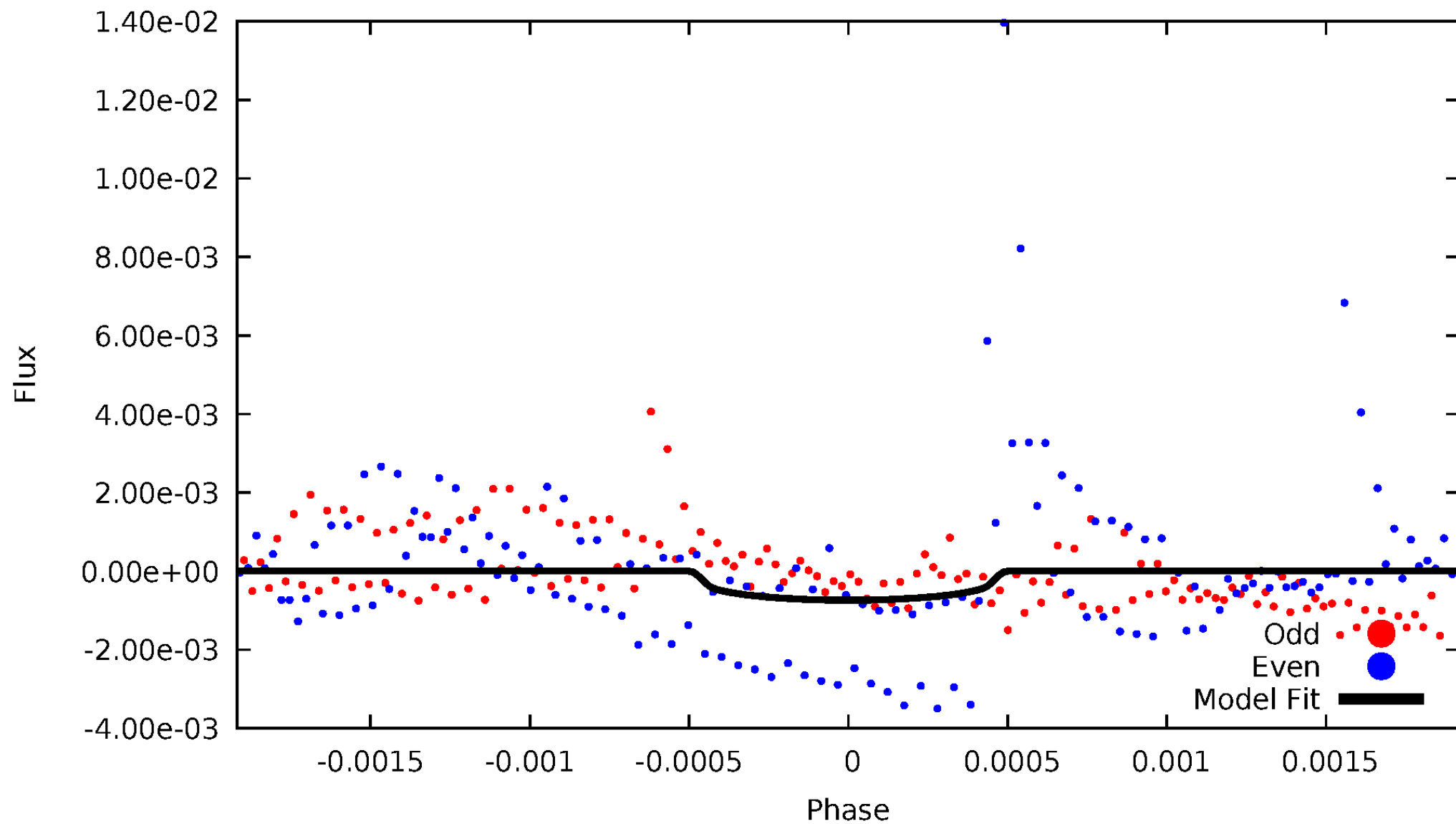


TCE 009346592-06



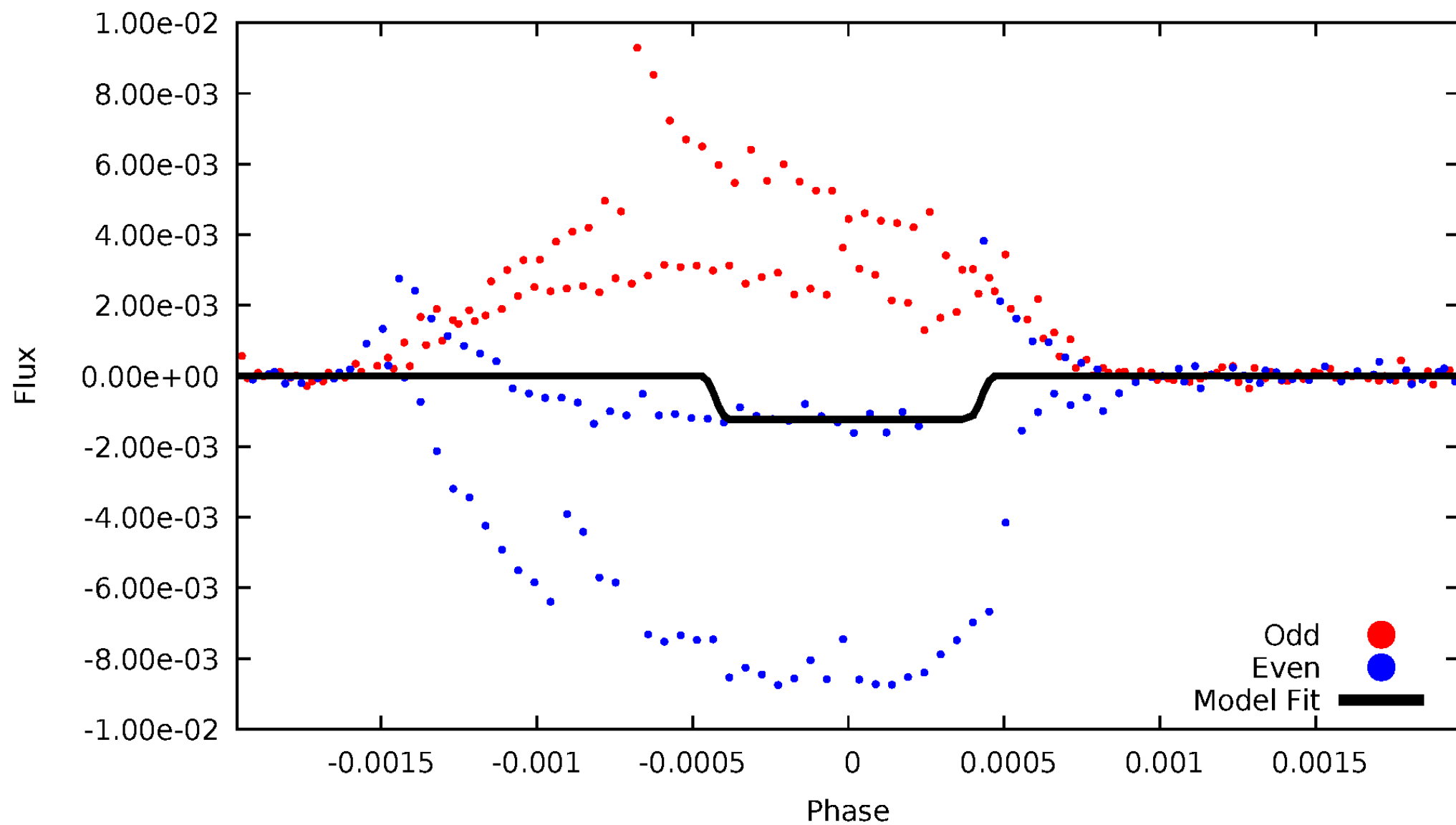
DV Odd/Even

TCE 009346592-06



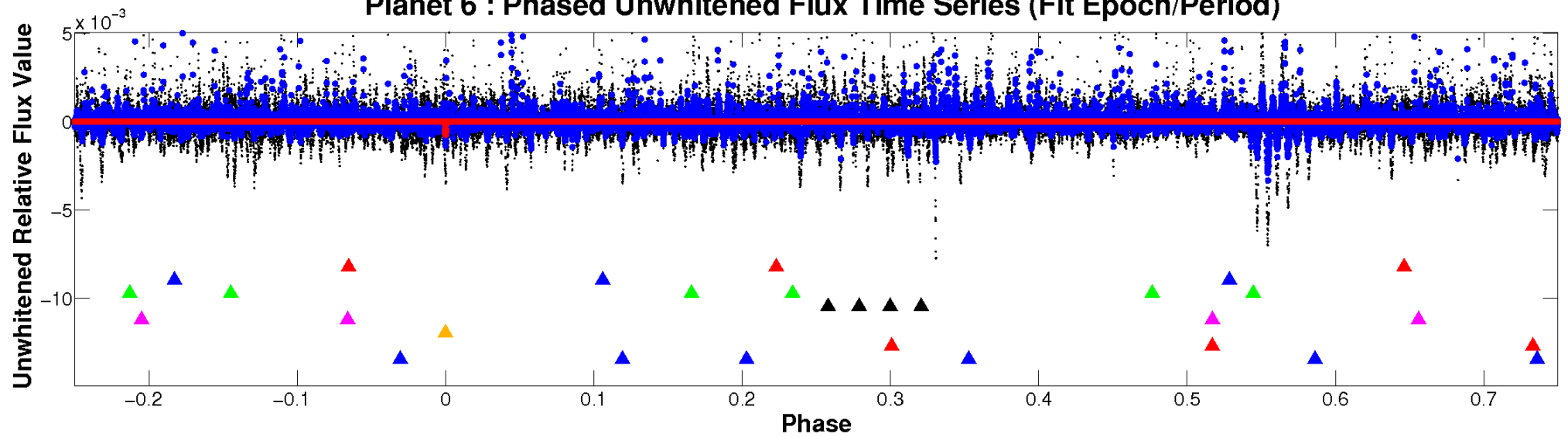
ALT Odd/Even

TCE 009346592-06

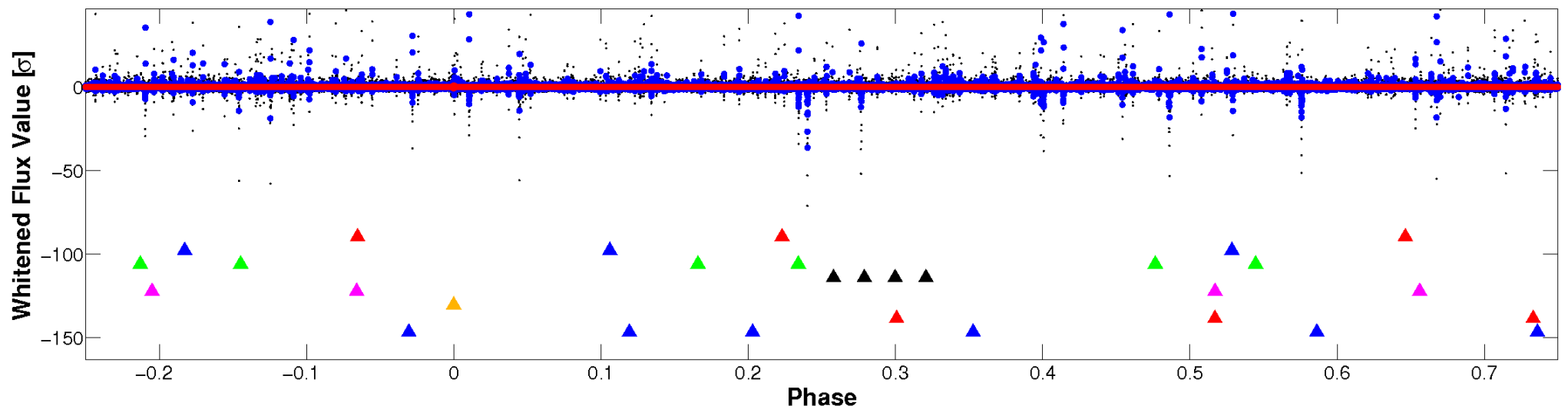


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

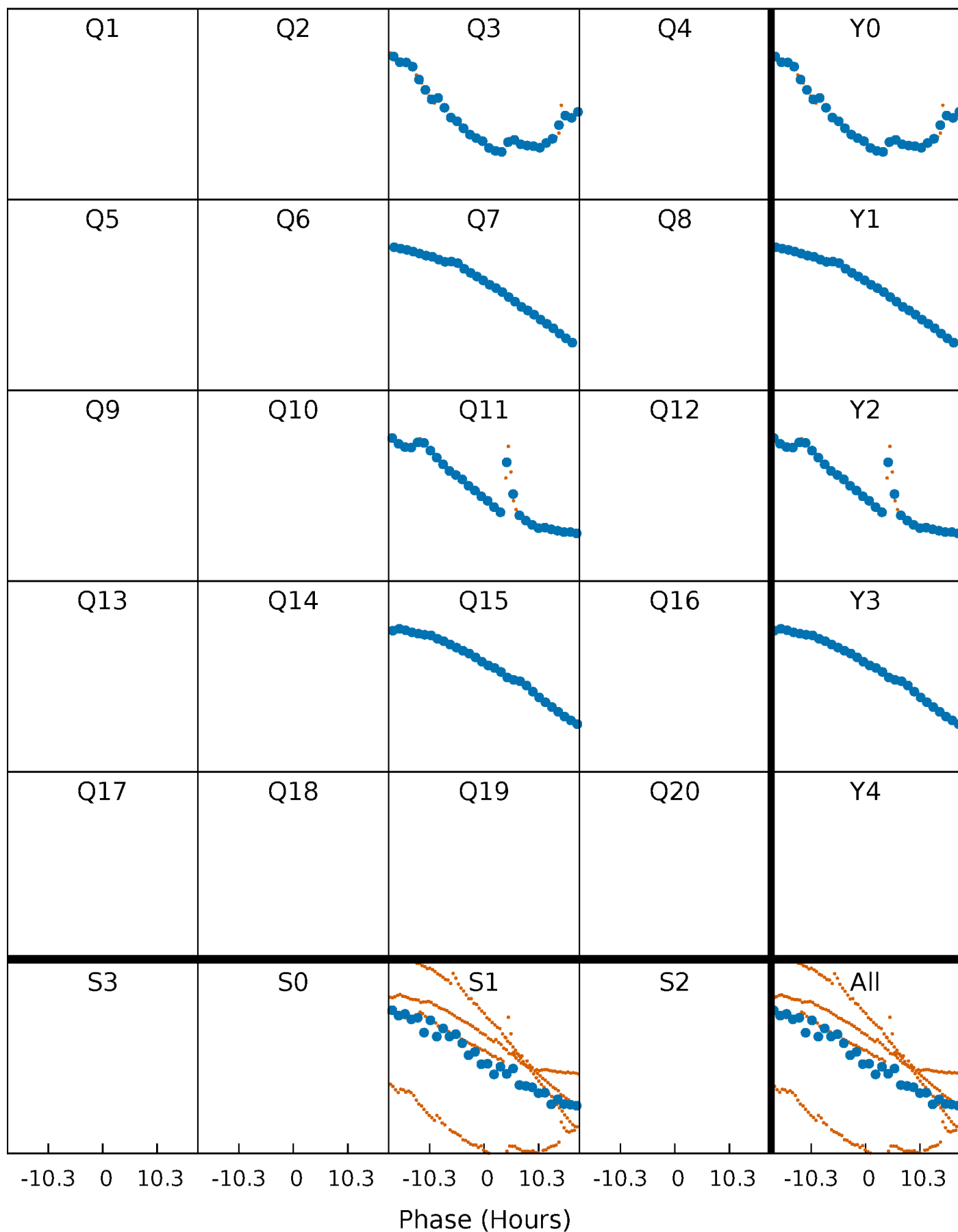


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



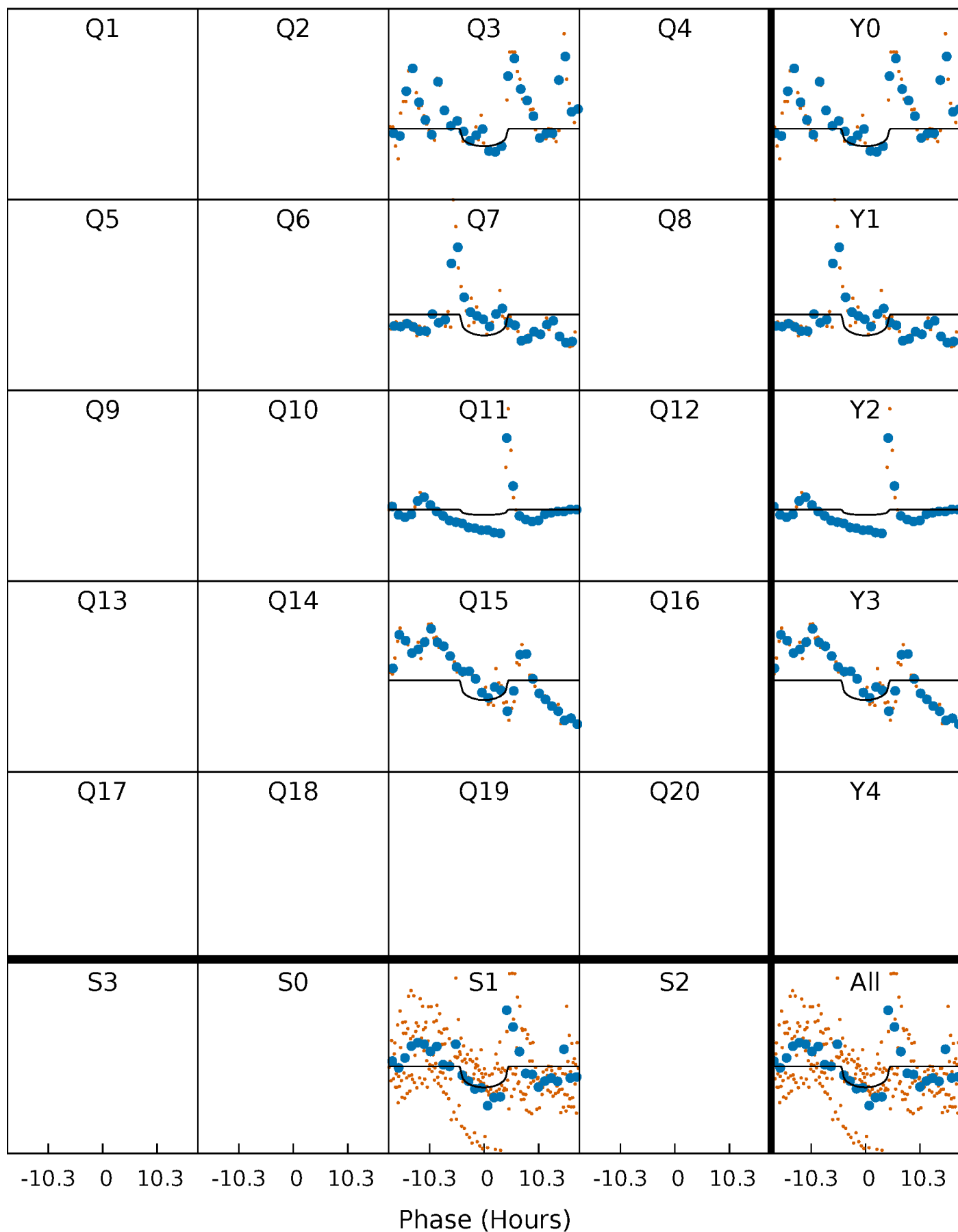
PDC Quarter-Phased Transit Curves

TCE 009346592-06 $P=391.787932$ Days $T_0=276.655756$ (BKJD)



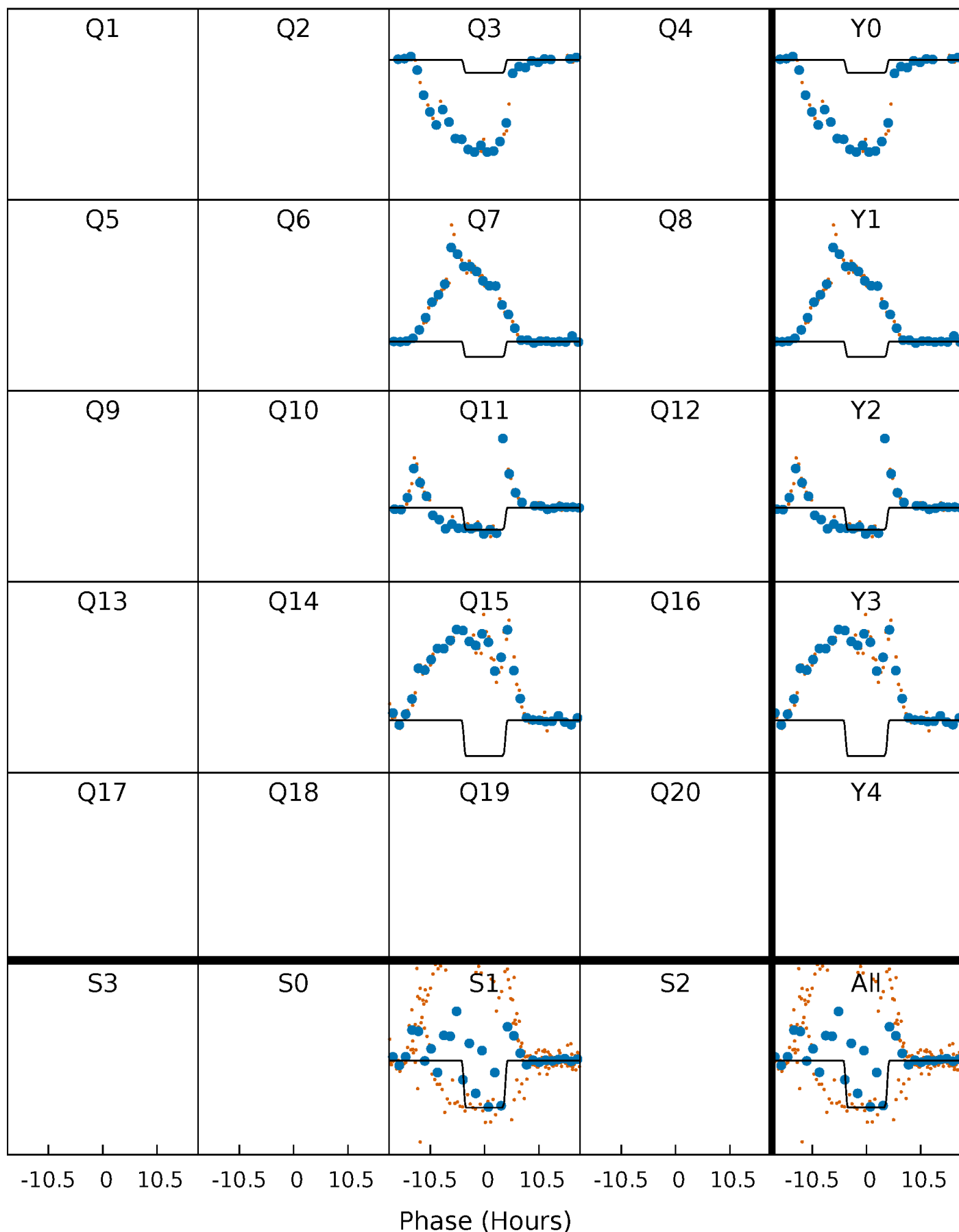
DV Quarter-Phased Transit Curves

TCE 009346592-06 $P=391.787932$ Days $T_0=276.655756$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

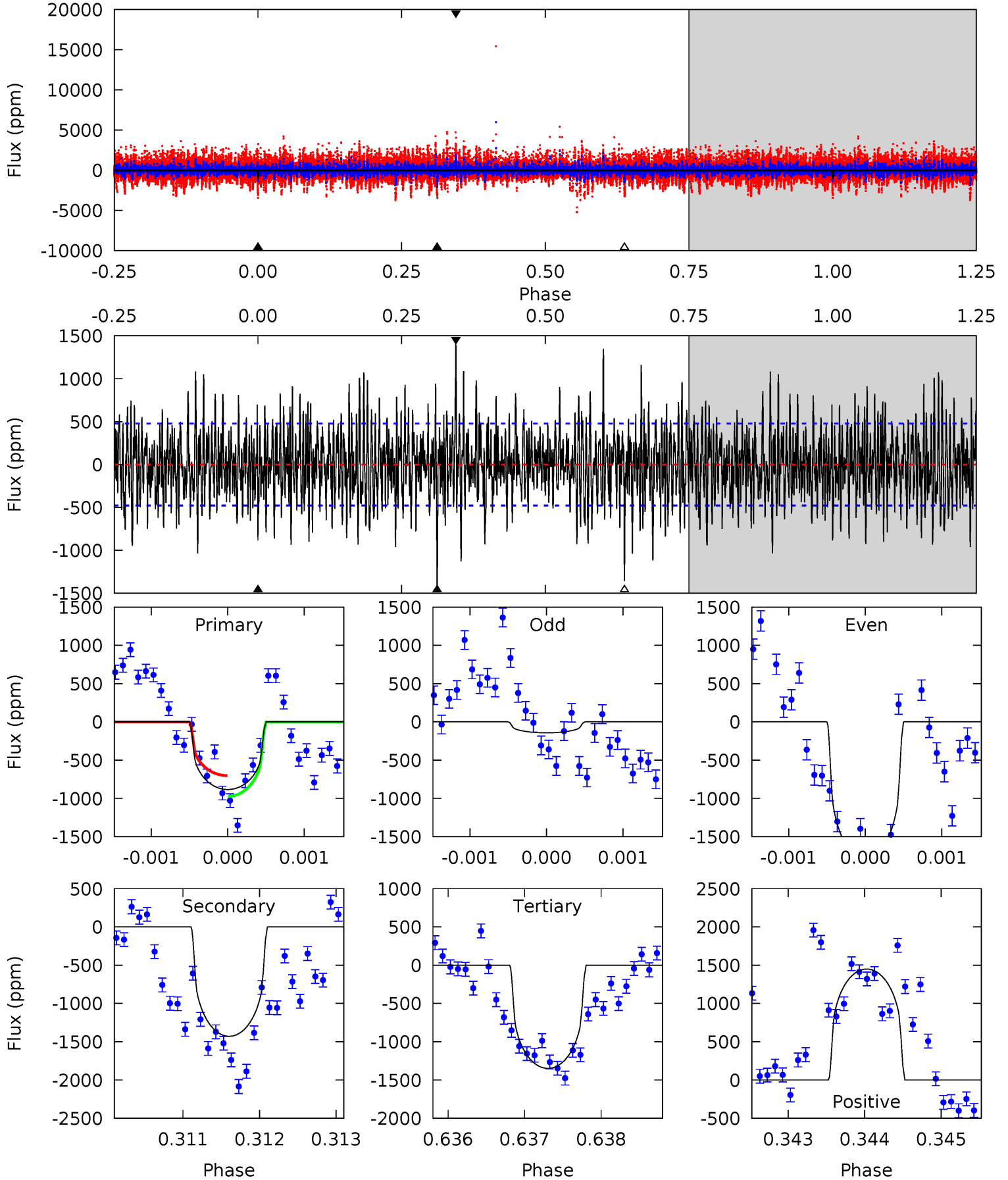
TCE 009346592-06 P=391.827135 Days $T_0=276.639154$ (BKJD)



DV Model-Shift Uniqueness Test

009346592-06, P = 391.787932 Days, E = 276.655756 Days

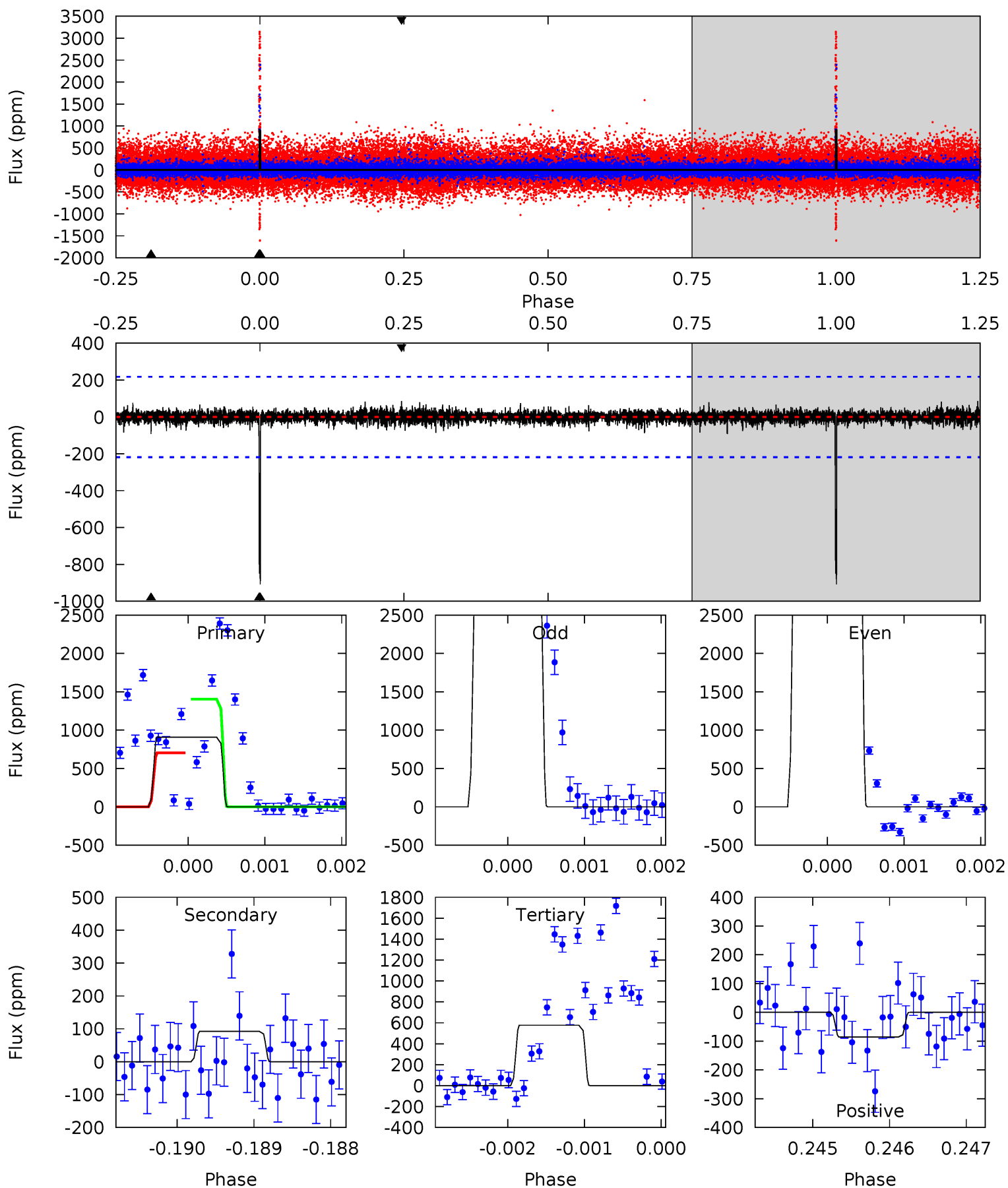
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	16.3	15.4	16.5	5.45	3.29	4.04	-5.29	-6.45	0.92	-0.23	7.61	2.13	0.50	1.55



Alt Model-Shift Uniqueness Test

009346592-06, P = 391.827135 Days, E = 276.639154 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	2.32	14.5	2.14	5.46	3.31	0.67	8.30	20.6	-12.1	0.17	26.6	-0.70	0.09	0



Stellar Parameters For KIC 009346592

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4234^{+128}_{-128}	$4.619^{+0.053}_{-0.018}$	$0.020^{+0.250}_{-0.300}$	$0.650^{+0.036}_{-0.061}$	$0.640^{+0.056}_{-0.056}$	$3.283^{+0.769}_{-0.283}$
	+3%/-3%	+1%/-0%	+1250%/-1500%	+6%/-9%	+9%/-9%	+23%/-9%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009346592-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1429 ± 88	$2.09^{+1.52}_{-1.28}$	219^{+8}_{-7}	4642^{+2708}_{-859}	$149425^{+821908}_{-100283}$
Alt.	-92 ± 40	$2.57^{+1.64}_{-1.44}$	220^{+8}_{-7}	2780^{+797}_{-386}	6051^{+28798}_{-4161}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

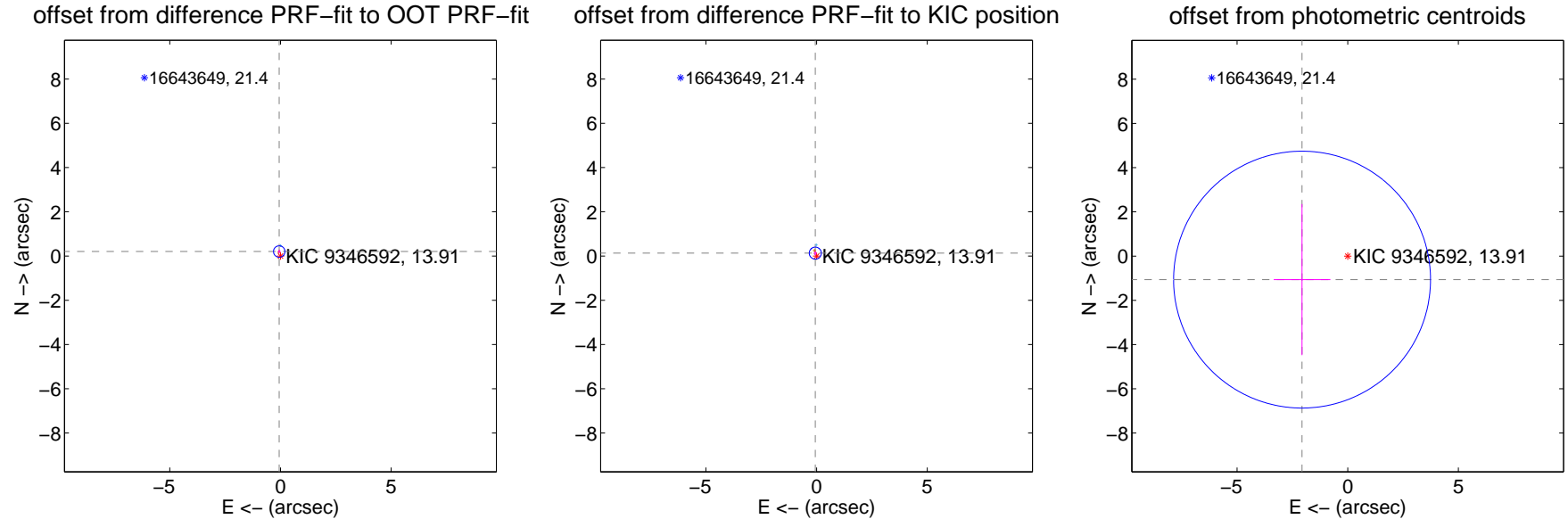
DV Centroid Data

Supplemental centroid analysis for 009346592-06. Kepler magnitude: 13.91. Transit SNR 4.75

There are 2 quarters with good PRF difference image offsets

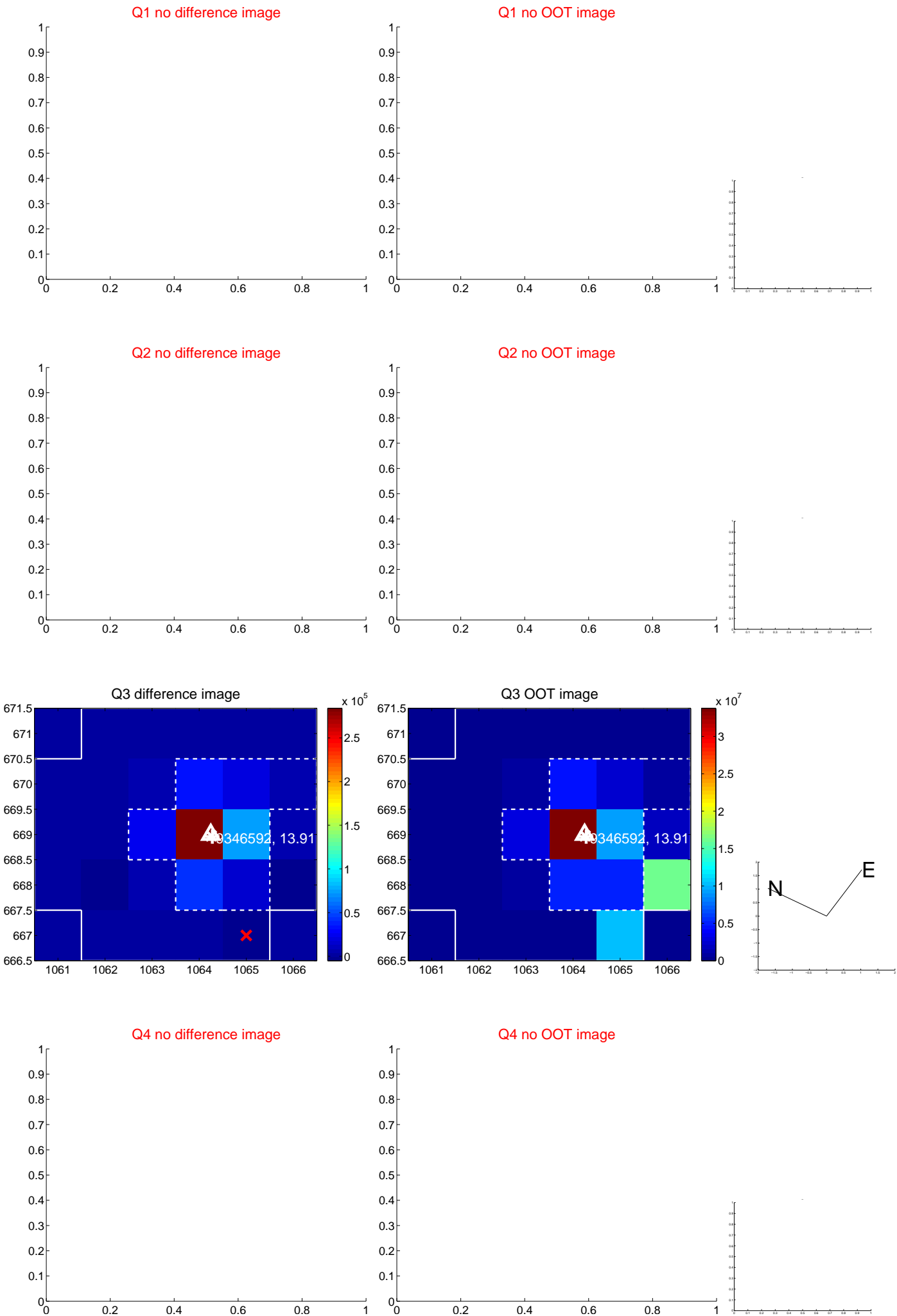
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.211 ± 0.086	2.44	0.056 ± 0.069	0.204 ± 0.090
PRF-fit source offset from KIC position	0.143 ± 0.091	1.58	0.058 ± 0.067	0.131 ± 0.095
photometric centroid source offset	2.32 ± 1.94	1.20	2.06 ± 1.28	-1.06 ± 3.42

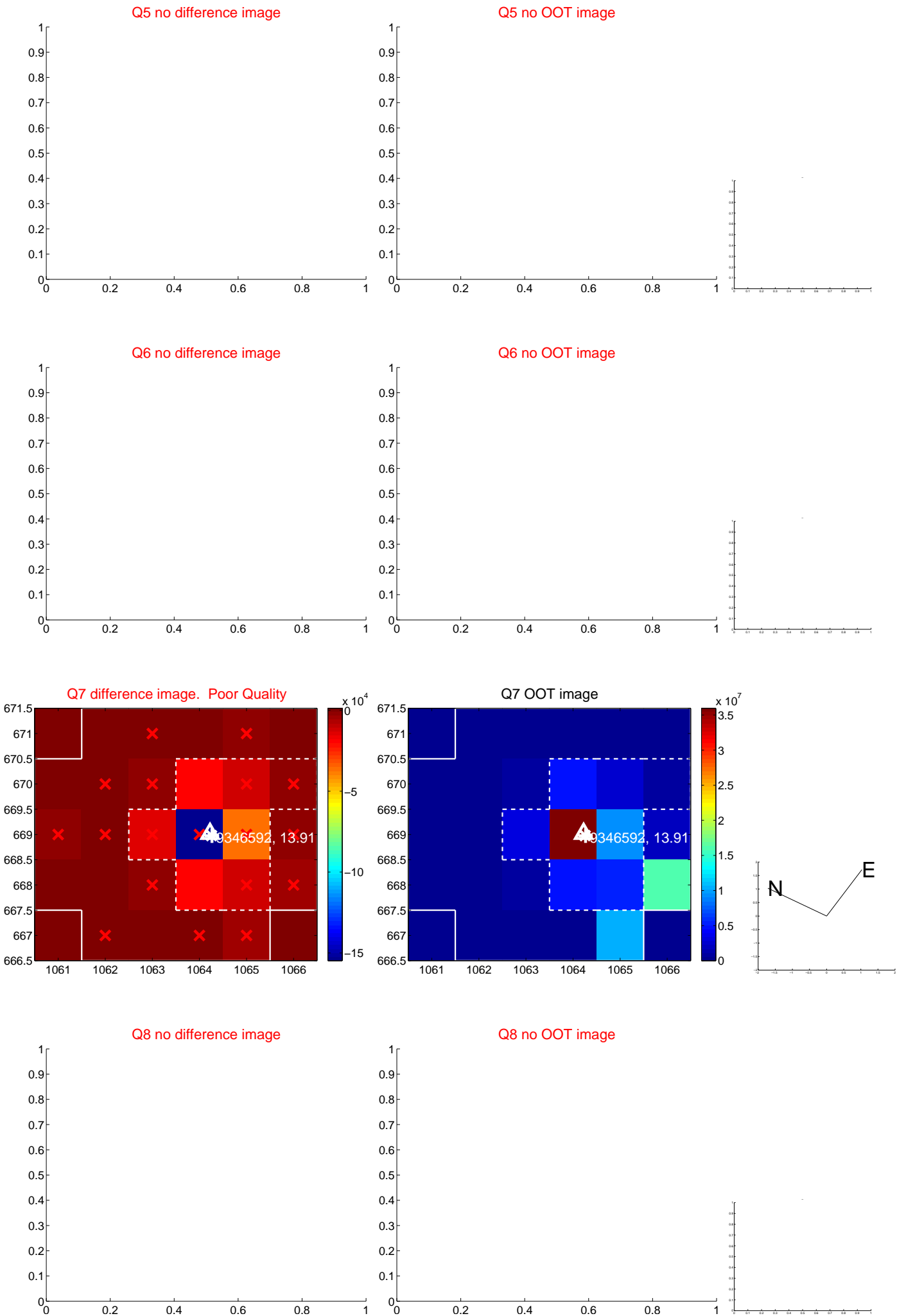


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q9 no difference image



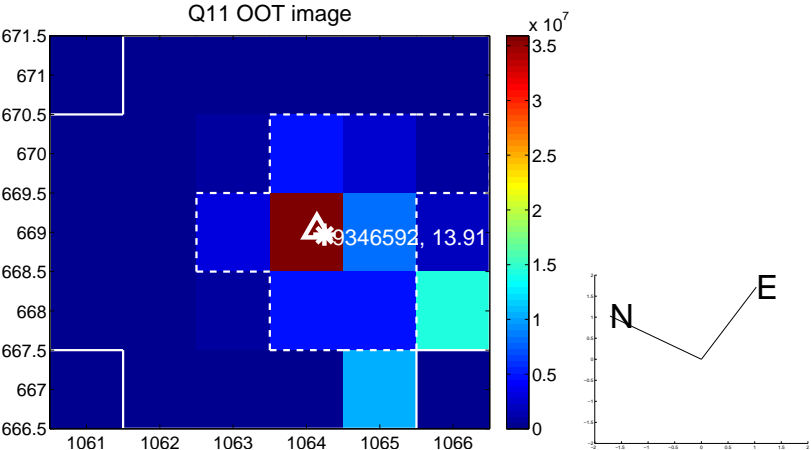
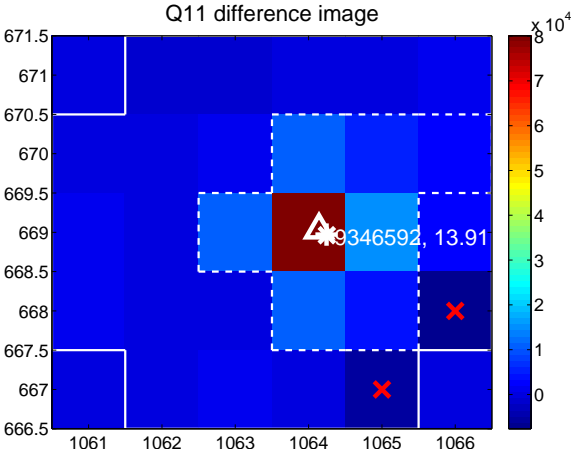
Q9 no OOT image



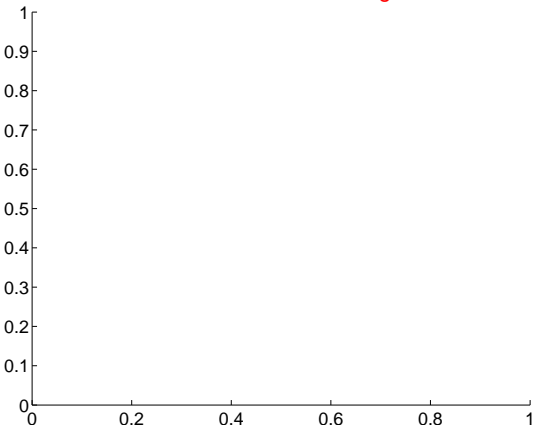
Q10 no difference image



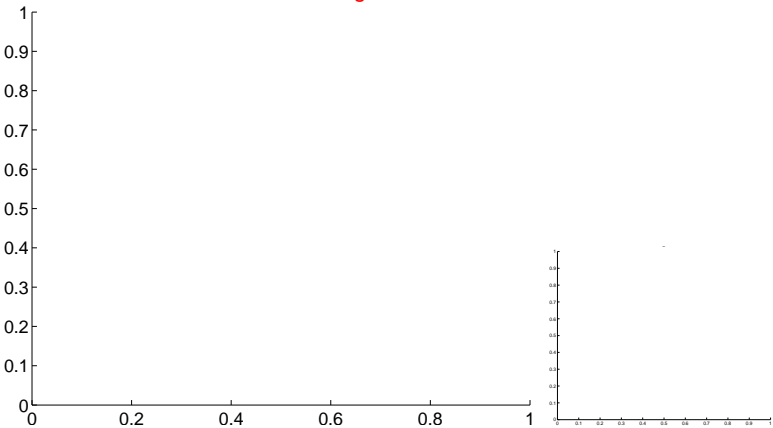
Q10 no OOT image



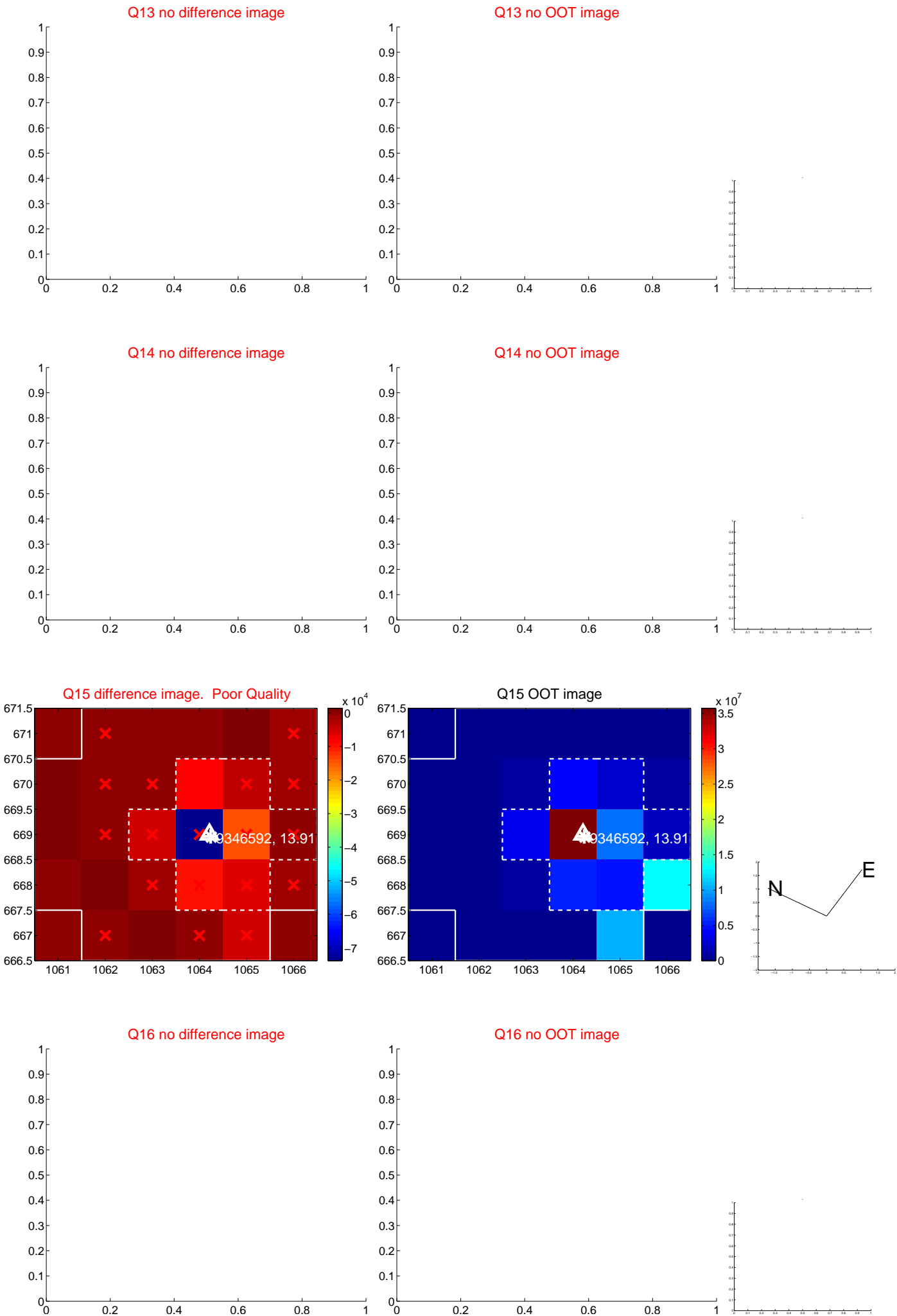
Q12 no difference image



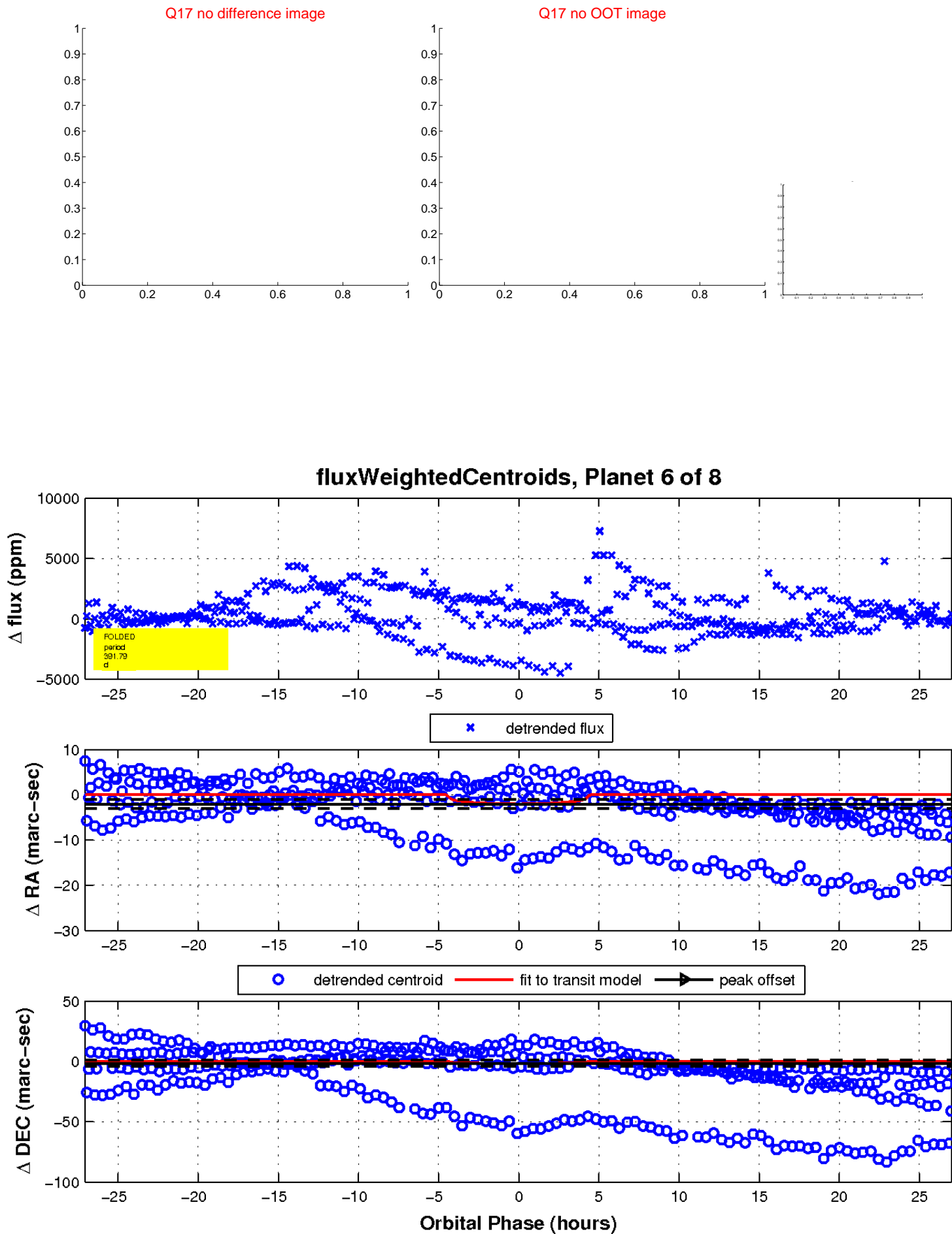
Q12 no OOT image



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

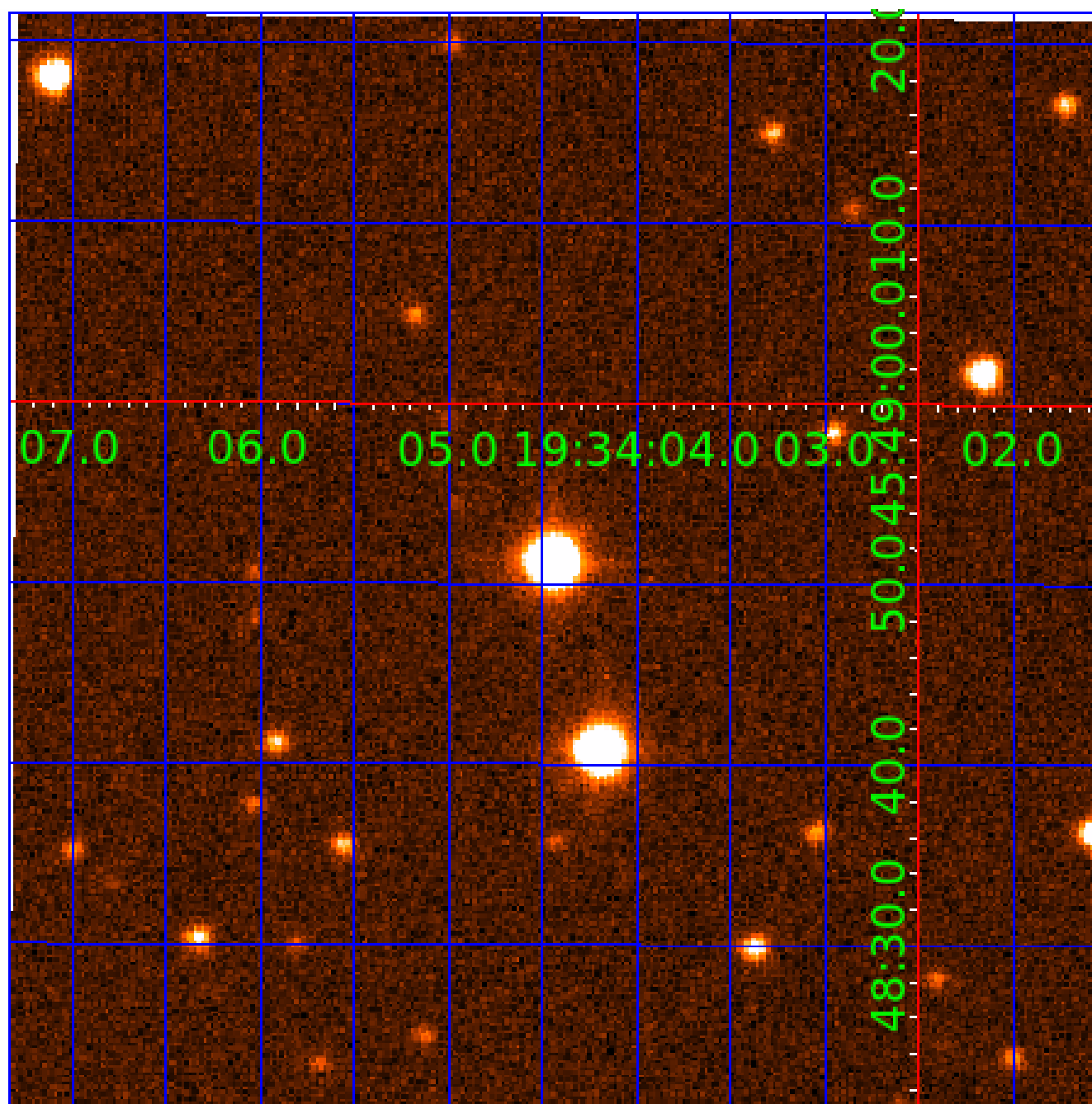


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009346592

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
009346592-01	OBS	No	504.746735	138.109841	1012.8	4.708	15.4	6.5	0.65	4234	2.03	0.11
009346592-02	OBS	No	504.919794	483.729108	807.2	9.458	15.5	4.7	0.65	4234	2.10	0.11
009346592-03	OBS	No	270.092408	193.258862	925.8	2.243	14.3	7.8	0.65	4234	2.37	0.24
009346592-04	OBS	No	399.981133	377.728840	639.9	3.920	13.7	5.3	0.65	4234	1.87	0.14
009346592-05	OBS	No	337.335446	250.824416	705.3	3.057	13.7	6.4	0.65	4234	1.90	0.18
009346592-06	OBS	No	391.787932	276.655756	742.4	9.022	12.7	4.8	0.65	4234	1.78	0.15
009346592-07	OBS	No	698.882333	172.118387	1119.5	7.401	13.9	7.3	0.65	4234	2.25	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009346592-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009346592-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS
009346592-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
009346592-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009346592-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009346592-06	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009346592-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

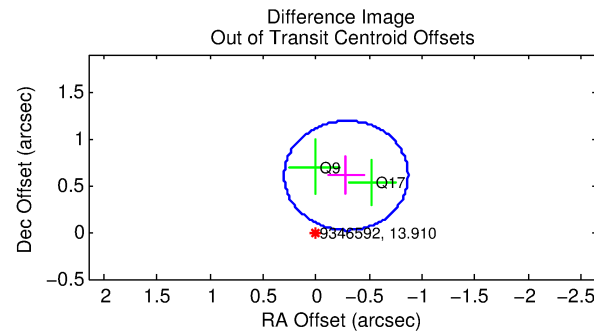
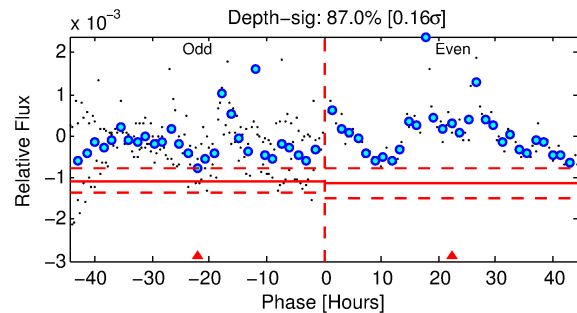
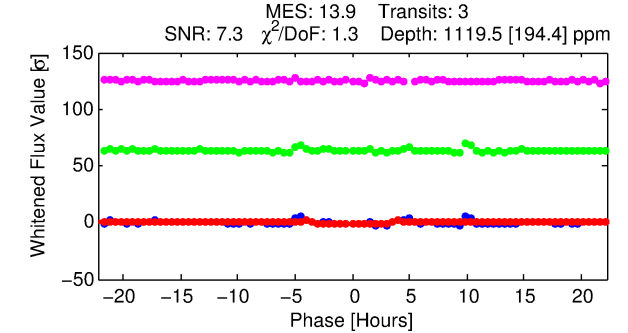
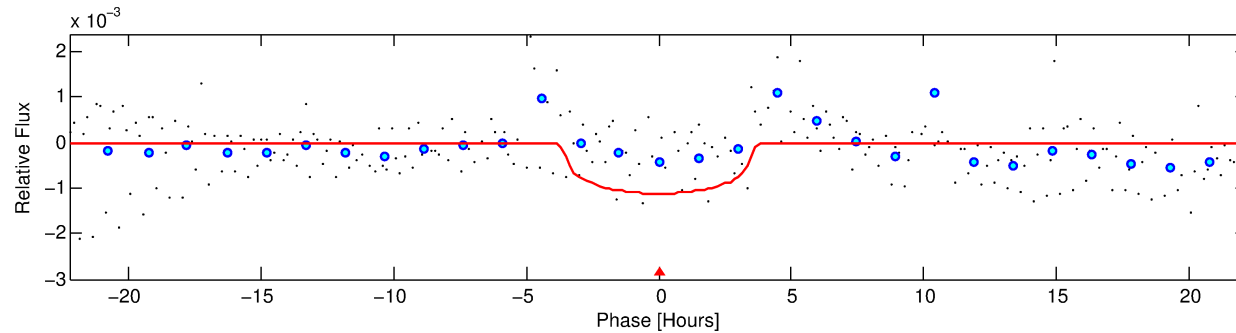
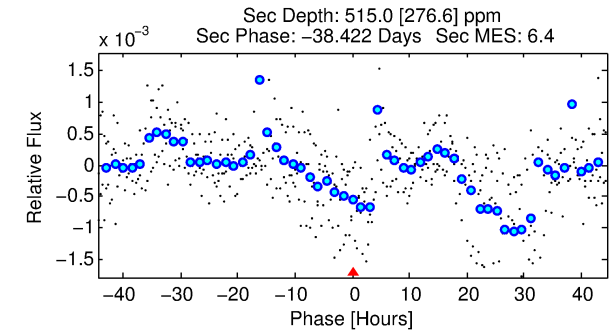
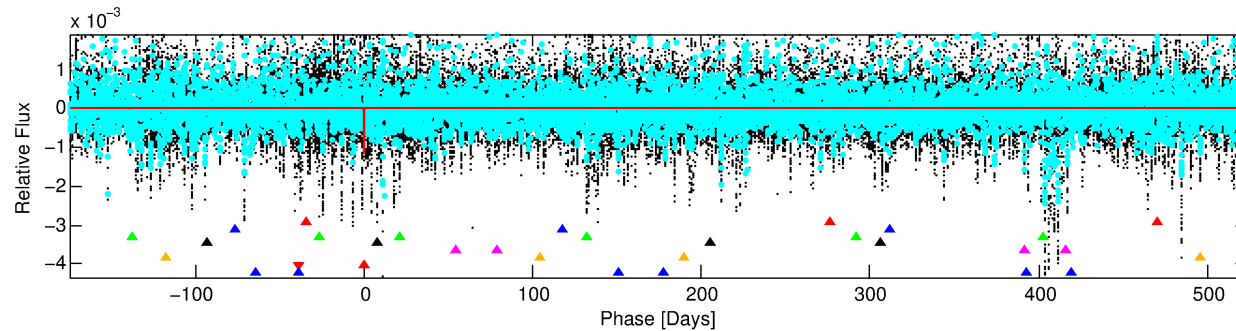
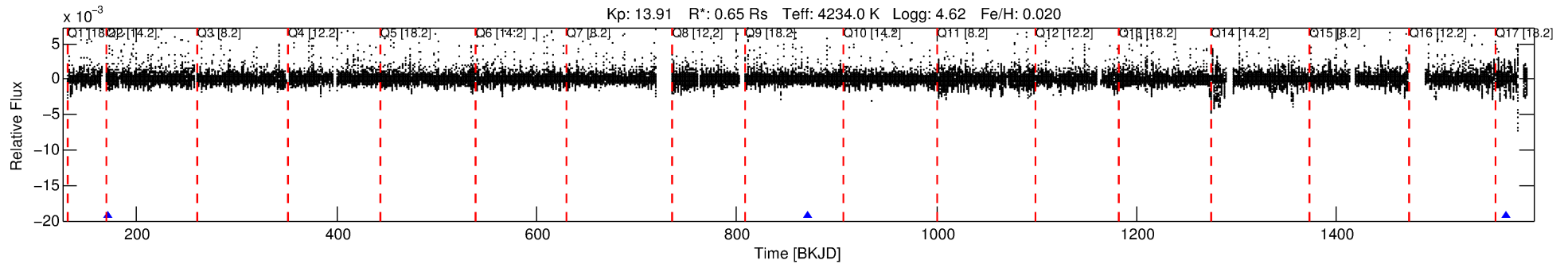
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009346592-07

No Significant Match Found

DV One-Page Summary

KIC: 9346592 Candidate: 7 of 8 Period: 698.882 d



DV Fit Results:

Period = 698.88233 [0.00776] d
Epoch = 172.1184 [0.0086] BKJD
Rp/R* = 0.0317 [0.0177]
a/R* = 596.78 [1026.10]
b = 0.62 [1.76]
Seff = 0.07 [0.01]
Teq = 131 [5] K
Rp = 2.25 [1.27] Re
a = 1.3292 [0.0992] AU
Ag = 98861.12 [122659.72] [0.81 σ]
Teffp = 3581 [1112] K [3.10 σ]

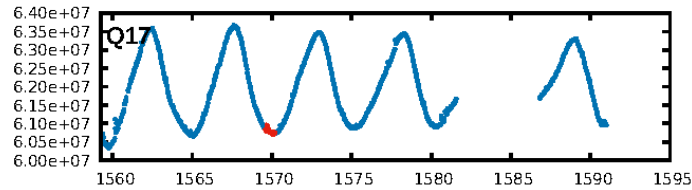
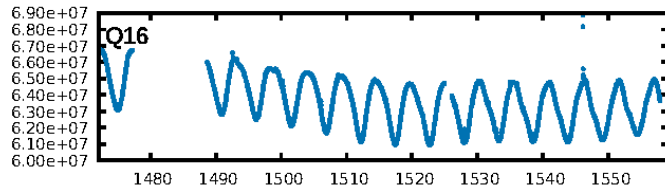
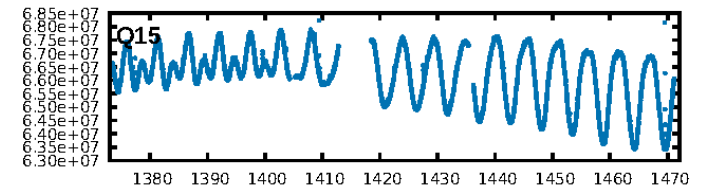
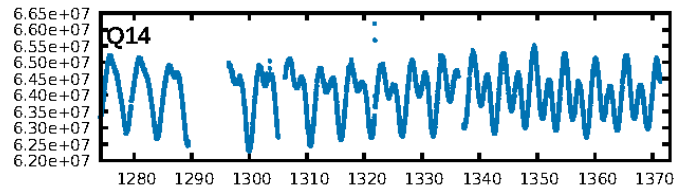
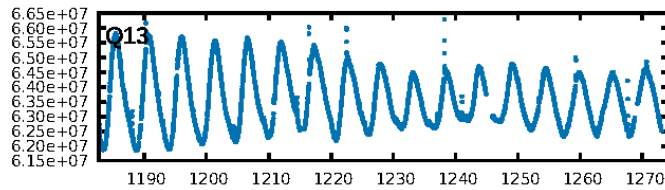
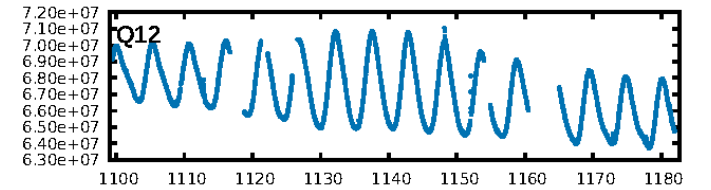
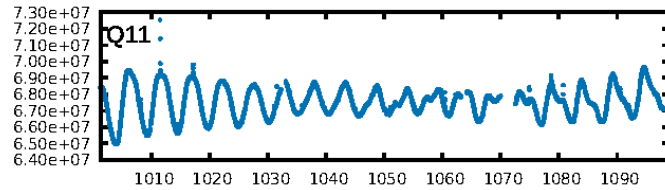
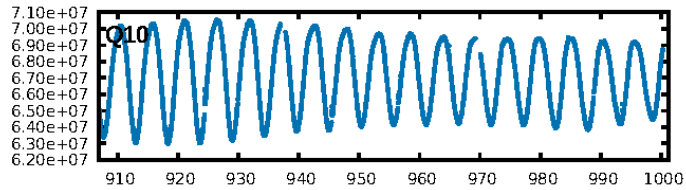
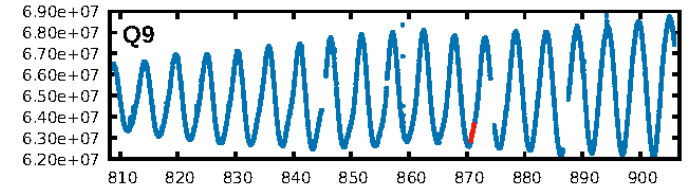
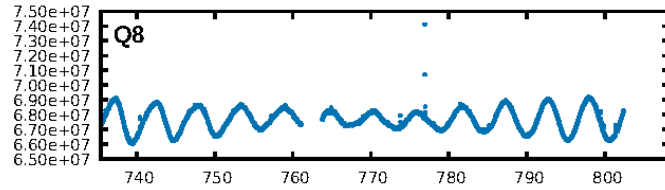
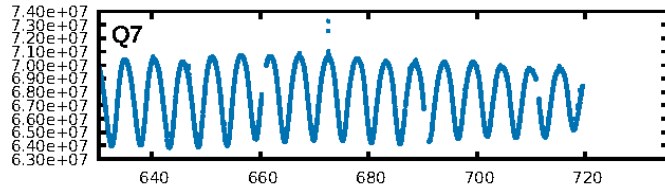
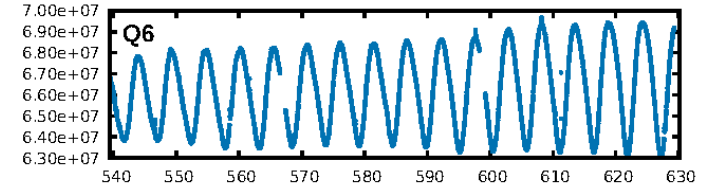
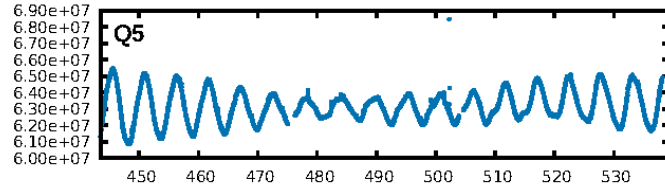
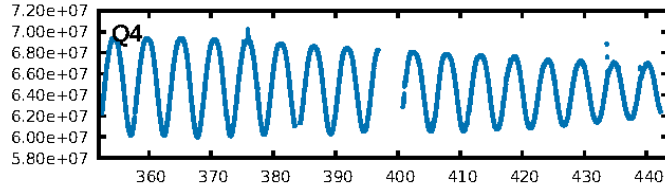
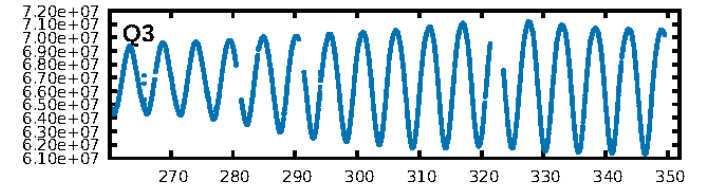
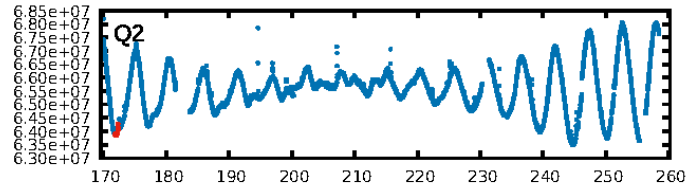
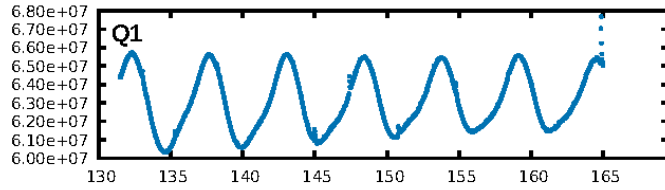
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [387.61 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 68.7%
ModelChiSquareGof-sig: 52.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 4.885
Centroid-sig: 13.9%
Centroid-so: 0.688 arcsec [0.15 σ]
OotOffset-rm: 0.668 arcsec [3.42 σ]
KicOffset-rm: 0.269 arcsec [1.99 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

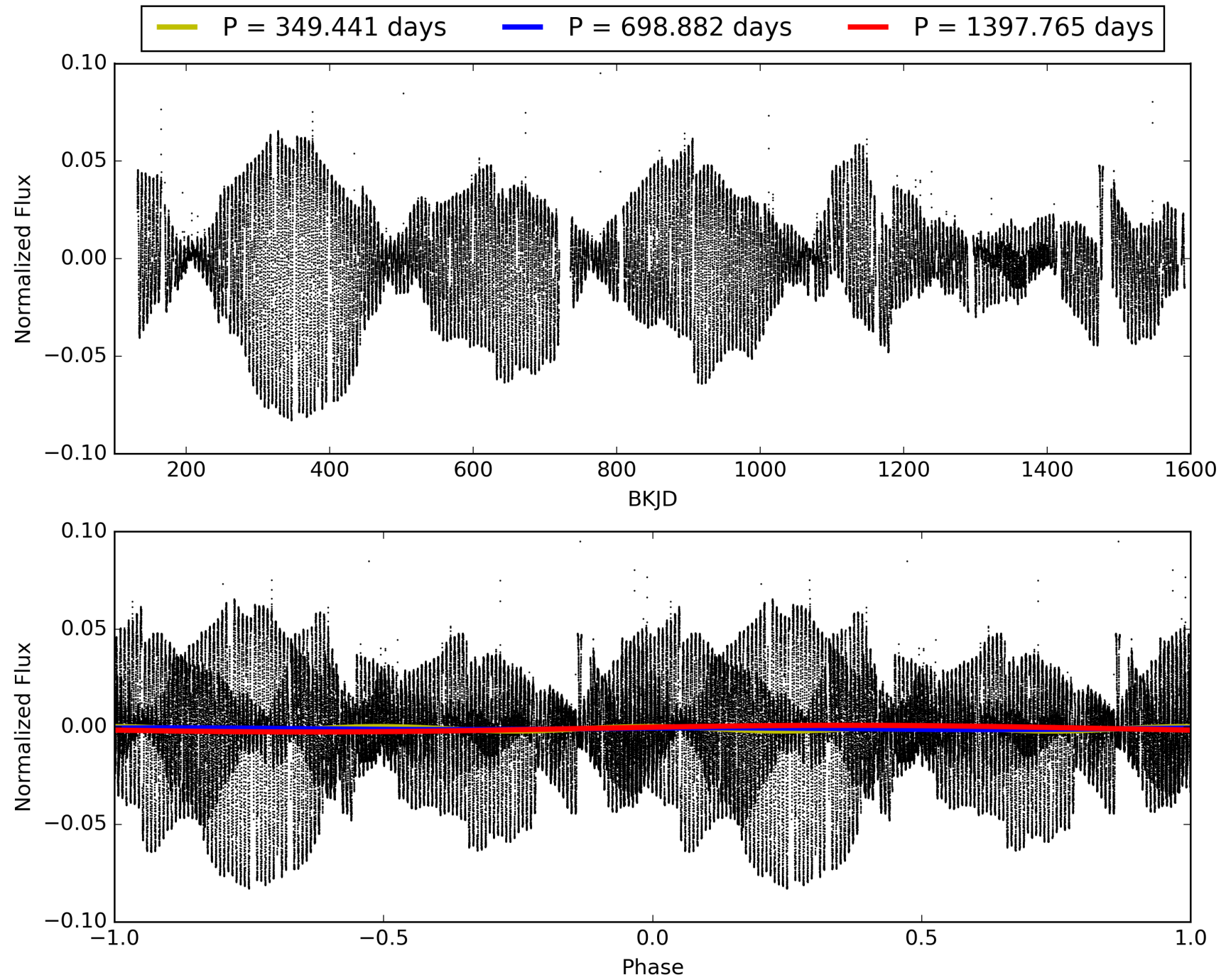
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:27:38 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009346592-07, PDC Light Curves

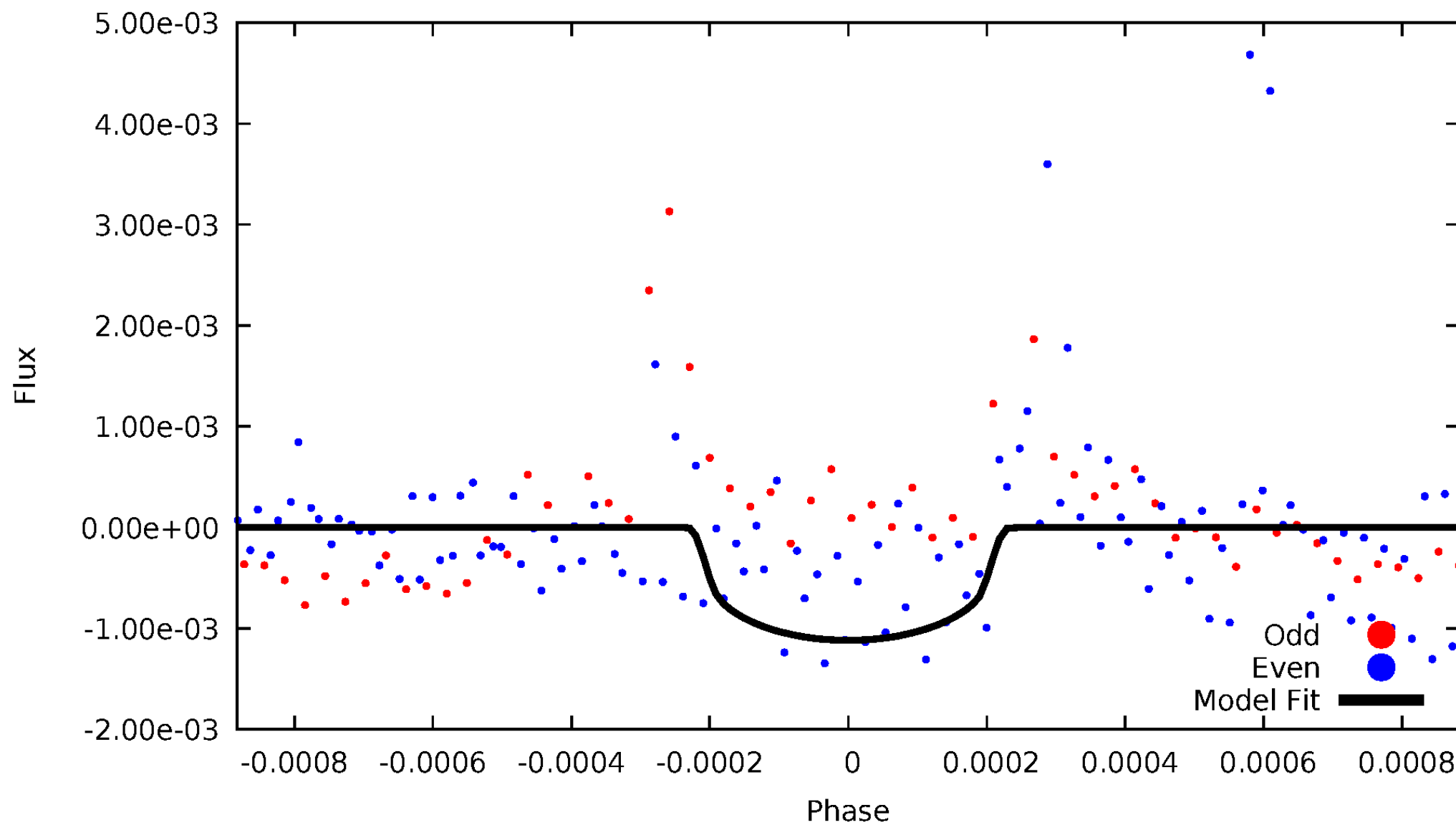


TCE 009346592-07



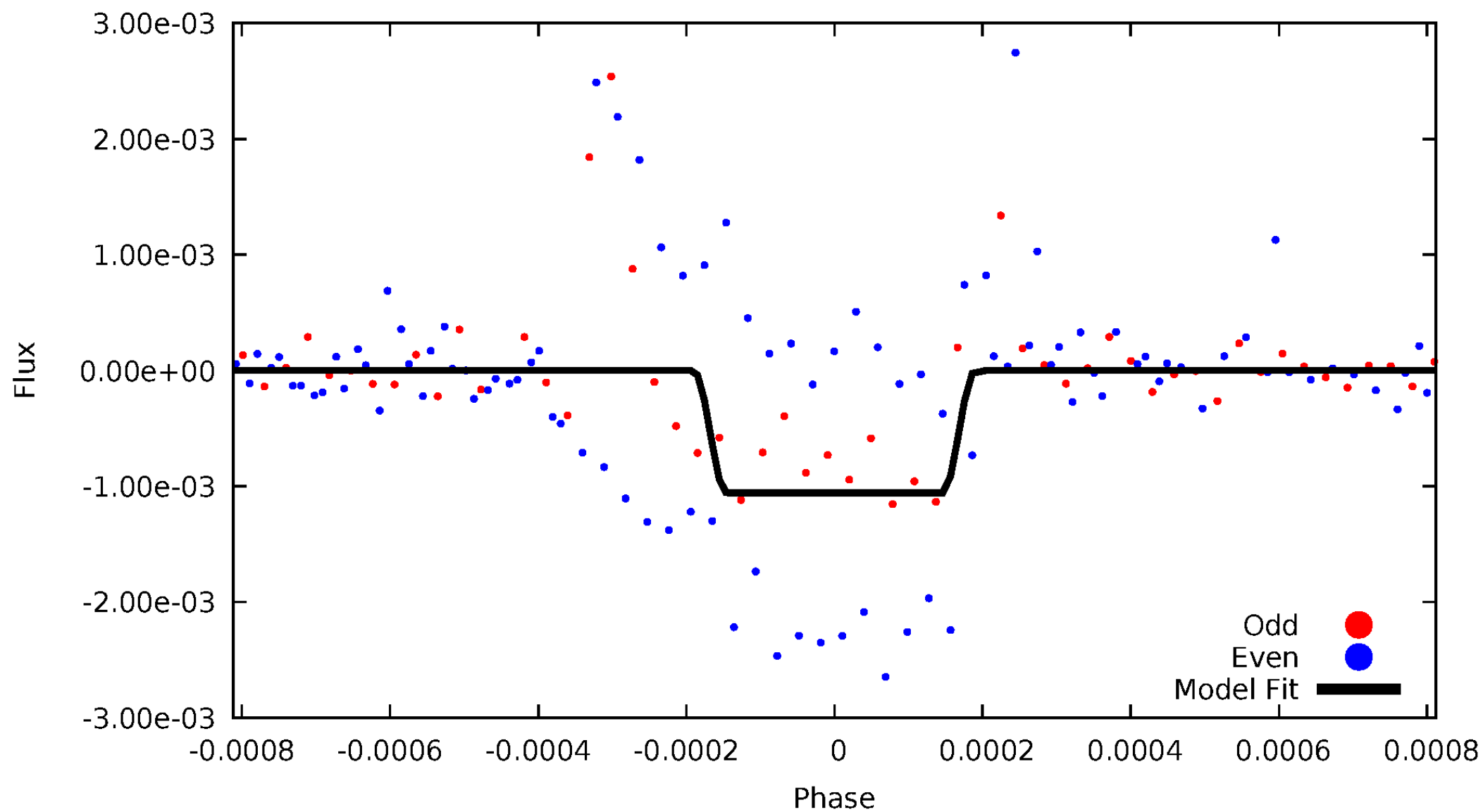
DV Odd/Even

TCE 009346592-07



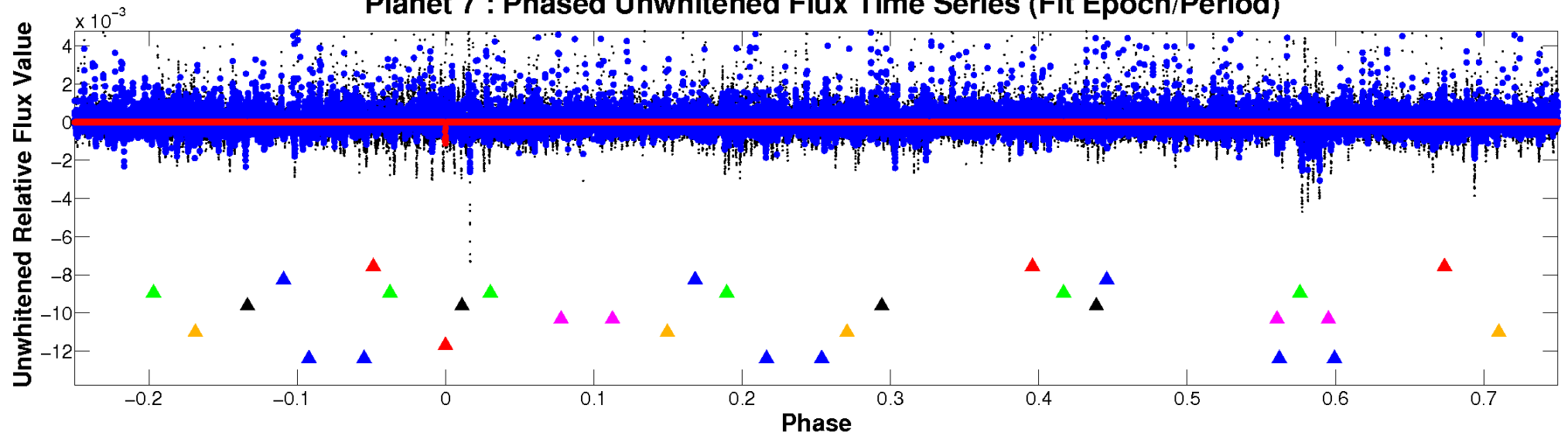
ALT Odd/Even

TCE 009346592-07

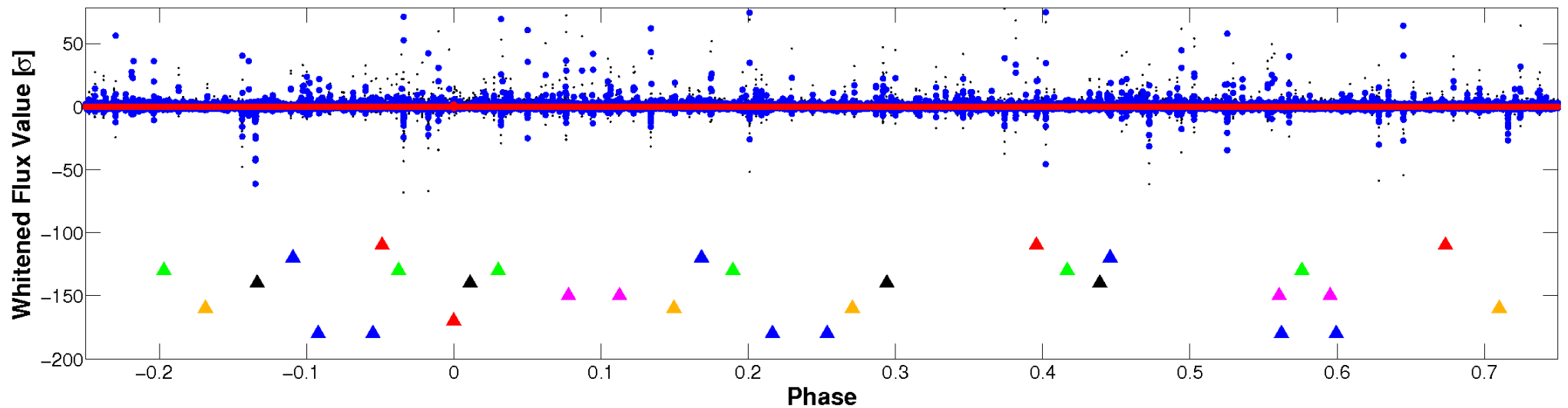


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

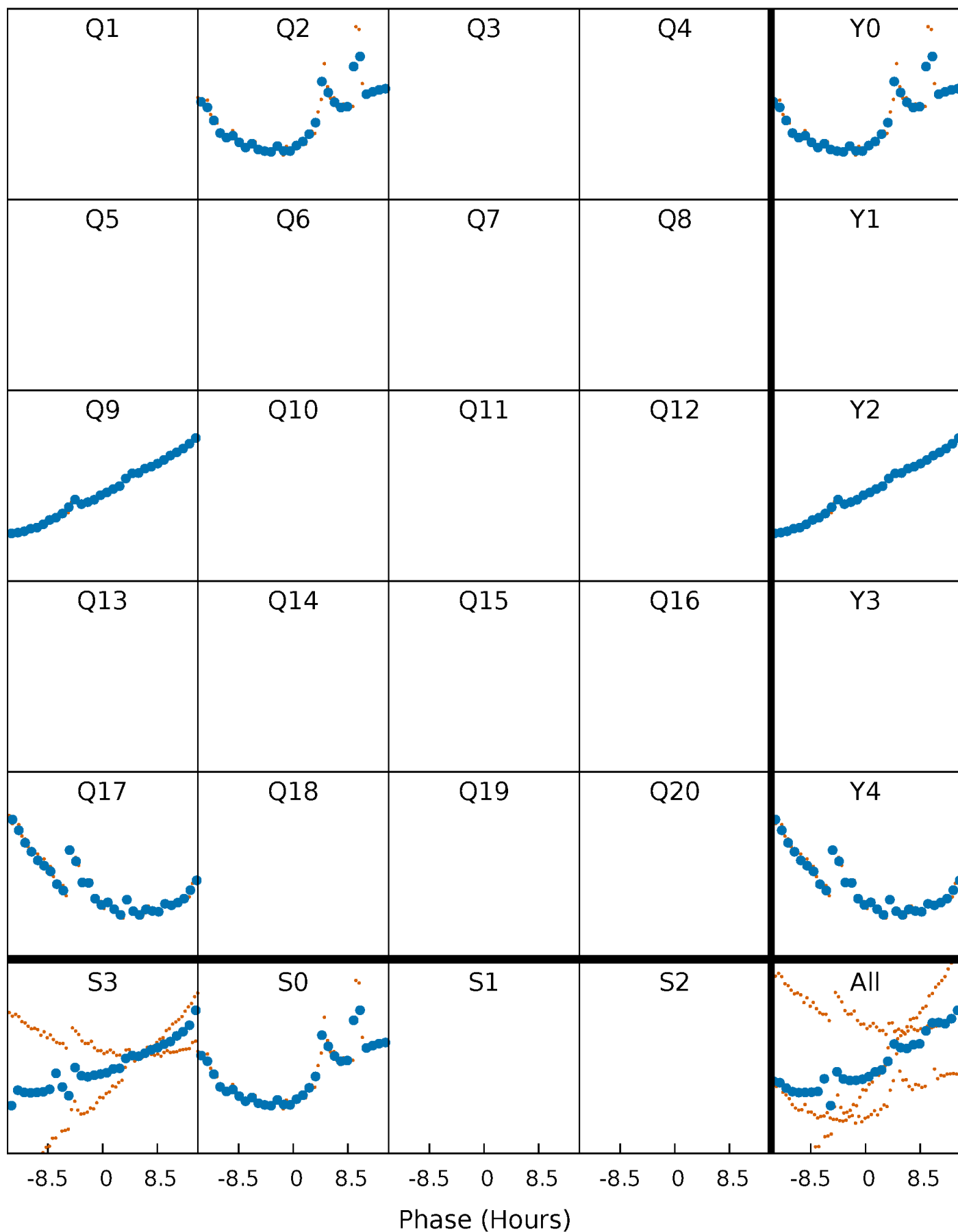


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



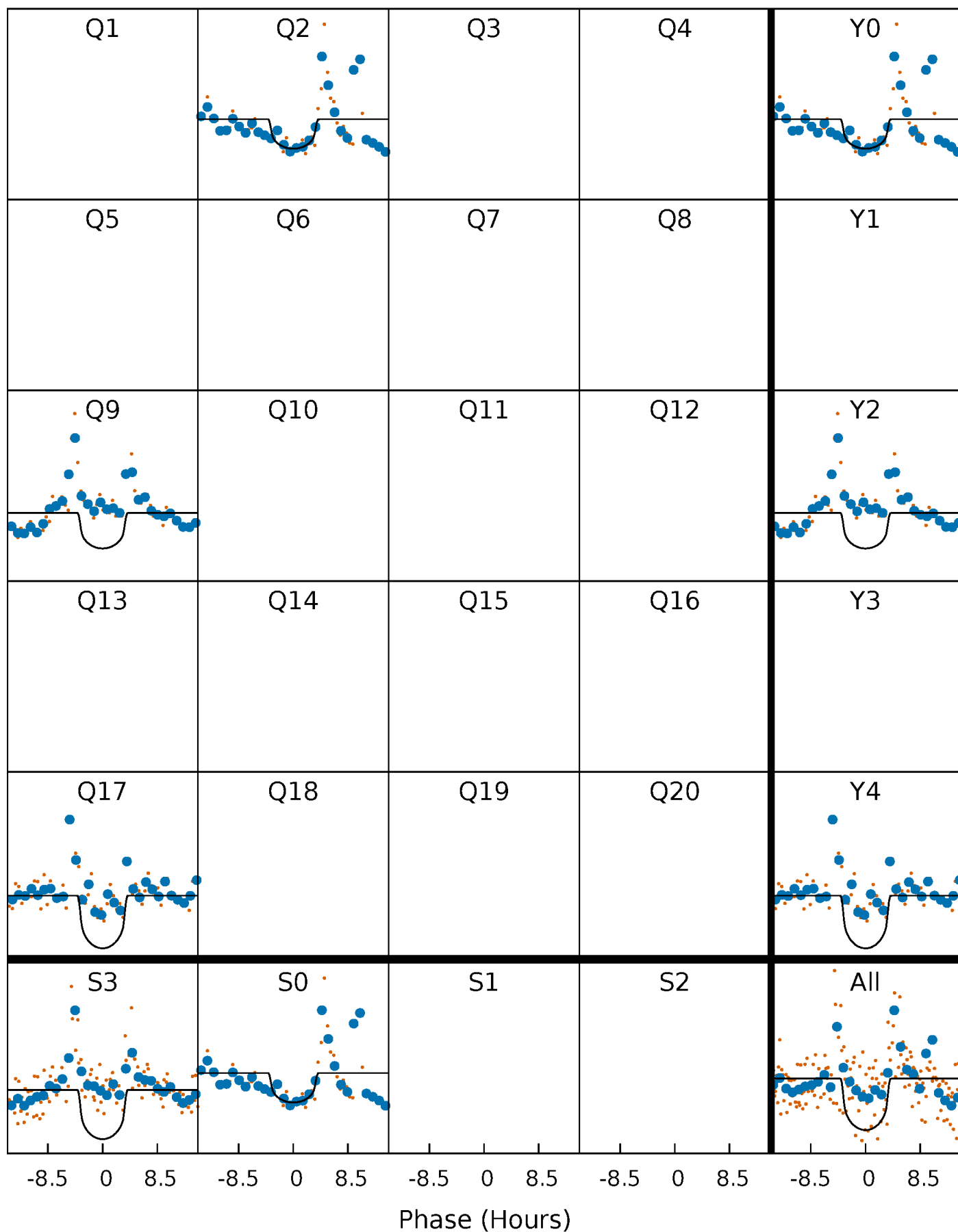
PDC Quarter-Phased Transit Curves

TCE 009346592-07 $P=698.882333$ Days $T_0=172.118387$ (BKJD)



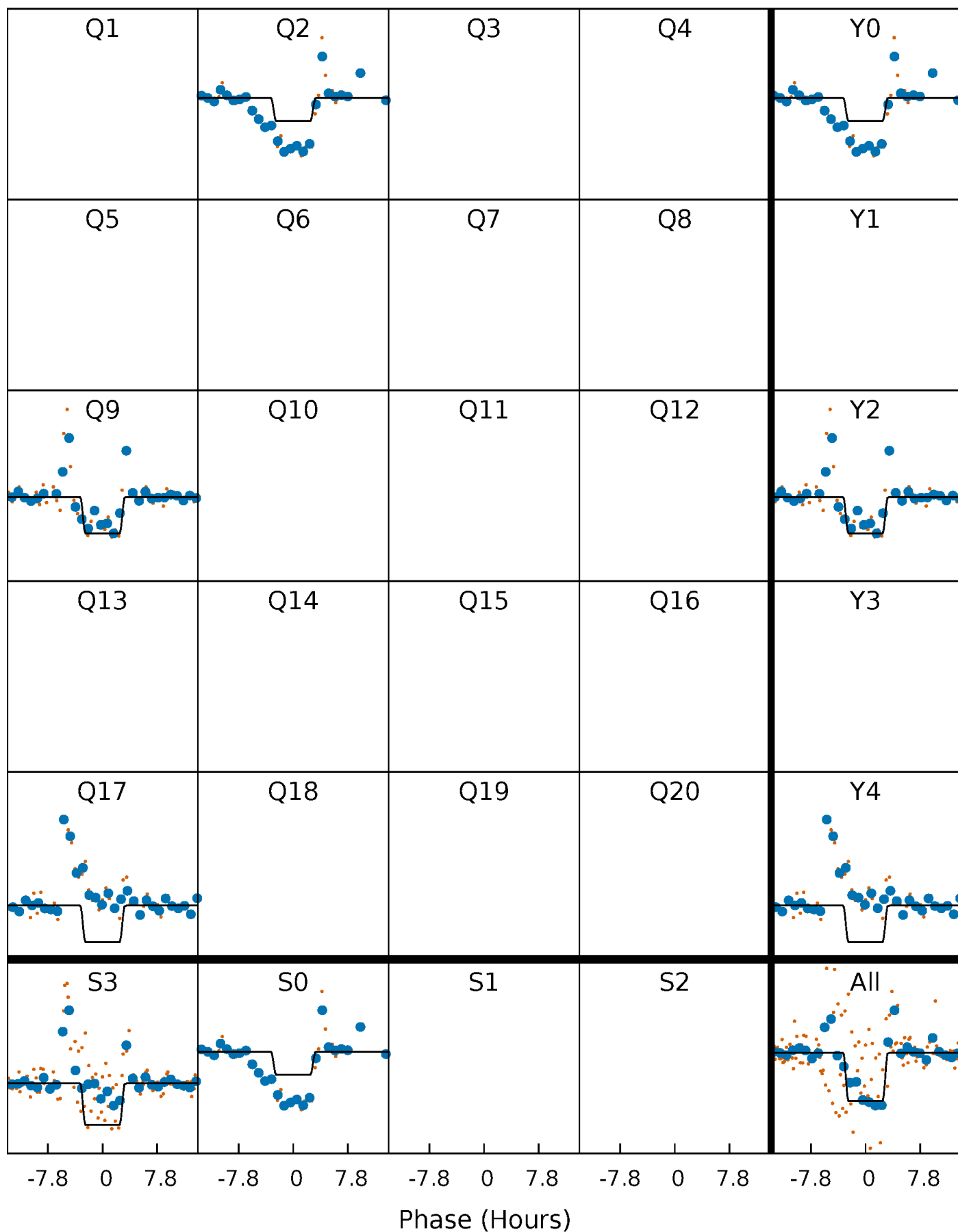
DV Quarter-Phased Transit Curves

TCE 009346592-07 $P=698.882333$ Days $T_0=172.118387$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

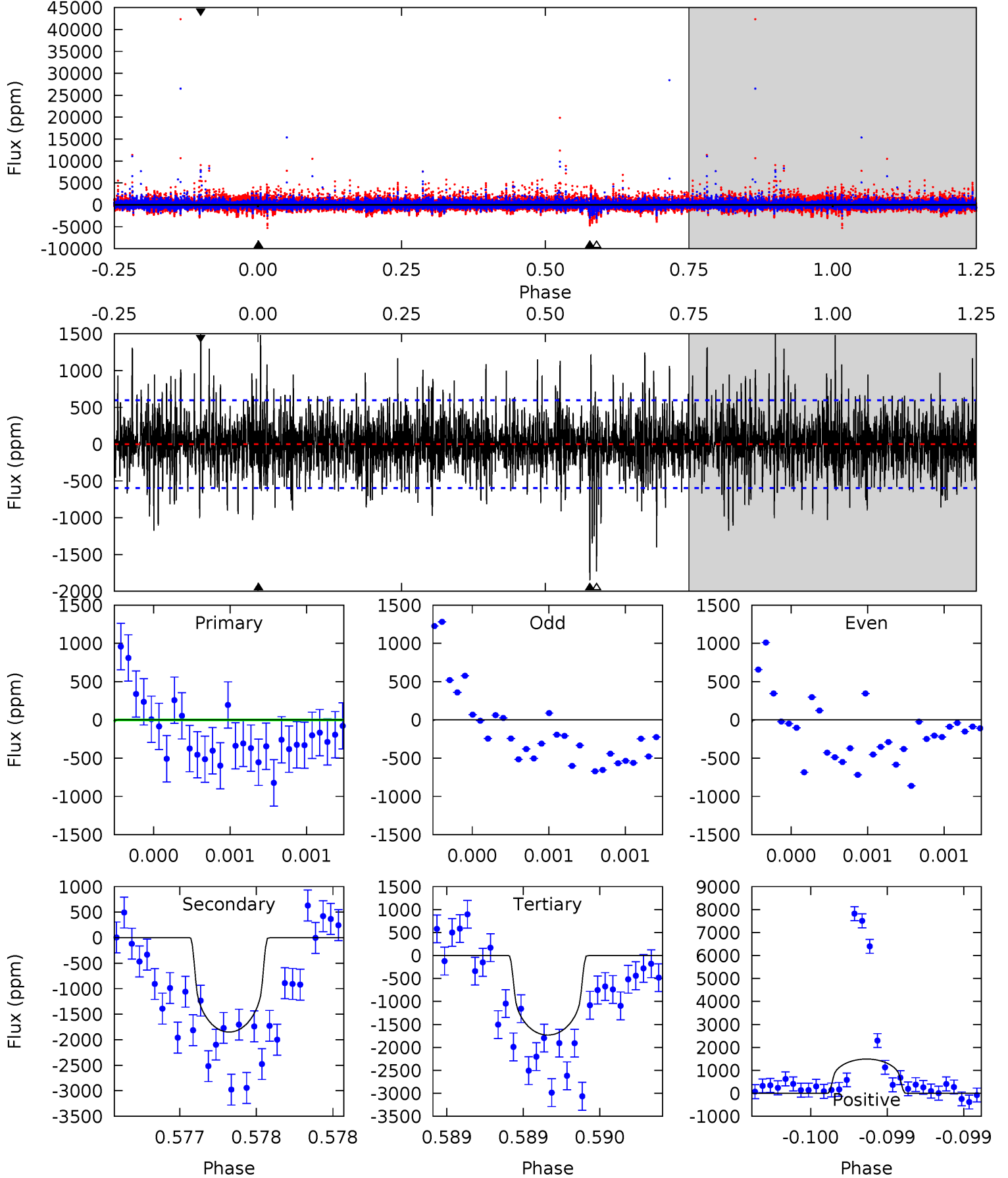
TCE 009346592-07 $P=698.882241$ Days $T_0=172.148622$ (BKJD)



DV Model-Shift Uniqueness Test

009346592-07, P = 698.882333 Days, E = 172.118387 Days

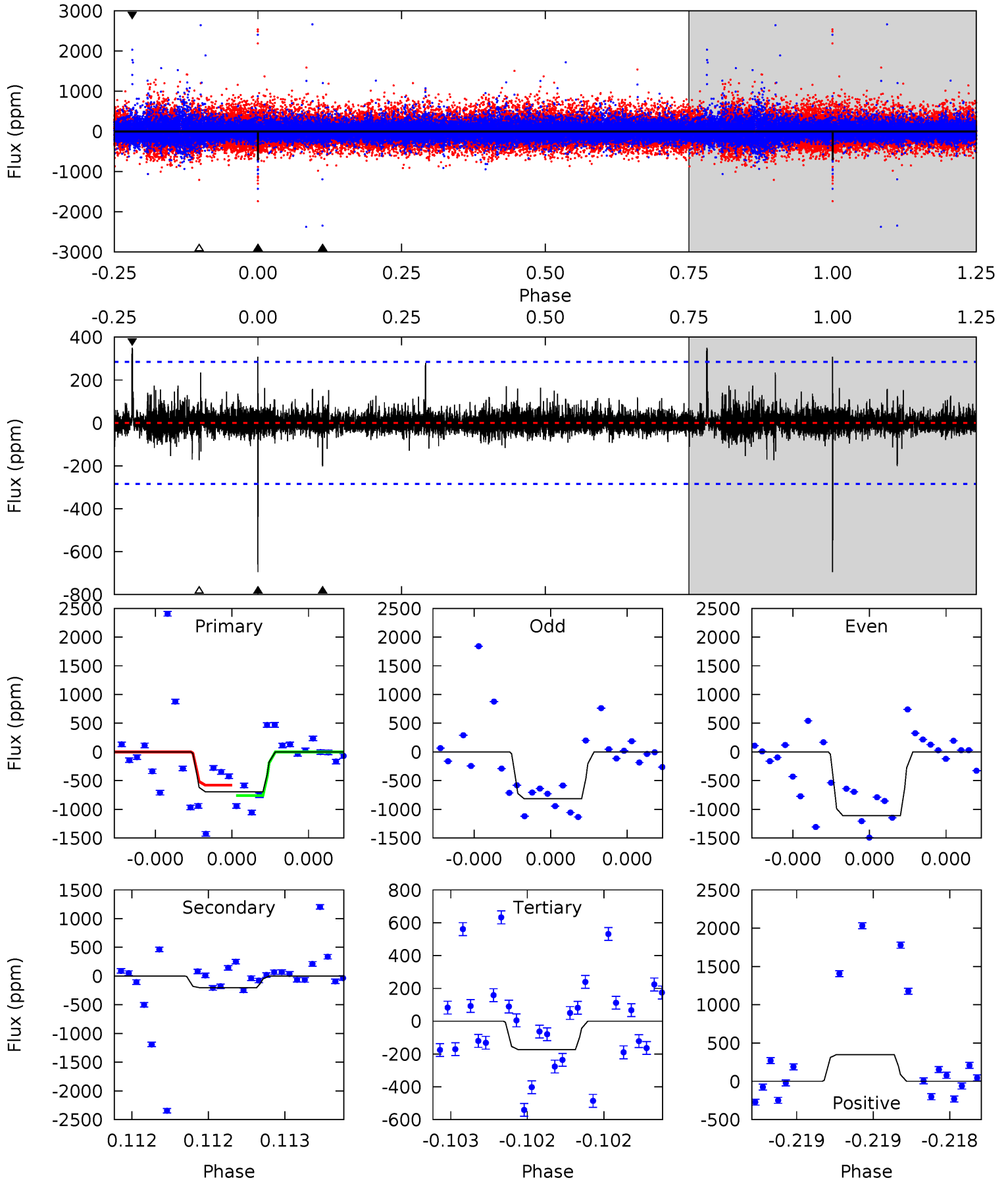
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.01	17.3	16.2	14.0	5.59	3.50	2.89	-13.2	-10.9	1.10	3.34	1.22	2.06	0.45	0.41



Alt Model-Shift Uniqueness Test

009346592-07, P = 698.882241 Days, E = 172.148622 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	3.98	3.42	6.93	5.63	3.57	0.59	10.3	6.82	0.56	-2.95	3.23	1.16	0.34	1.82



Stellar Parameters For KIC 009346592

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4234^{+128}_{-128}	$4.619^{+0.053}_{-0.018}$	$0.020^{+0.250}_{-0.300}$	$0.650^{+0.036}_{-0.061}$	$0.640^{+0.056}_{-0.056}$	$3.283^{+0.769}_{-0.283}$
	+3%/-3%	+1%/-0%	+1250%/-1500%	+6%/-9%	+9%/-9%	+23%/-9%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009346592-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1850 ± 107	$2.32^{+1.22}_{-1.23}$	181^{+6}_{-6}	4701^{+1983}_{-702}	$335494^{+1184364}_{-187521}$
Alt.	-201 ± 51	$2.34^{+1.23}_{-1.09}$	181^{+6}_{-6}	3164^{+787}_{-361}	$33820^{+100377}_{-19098}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

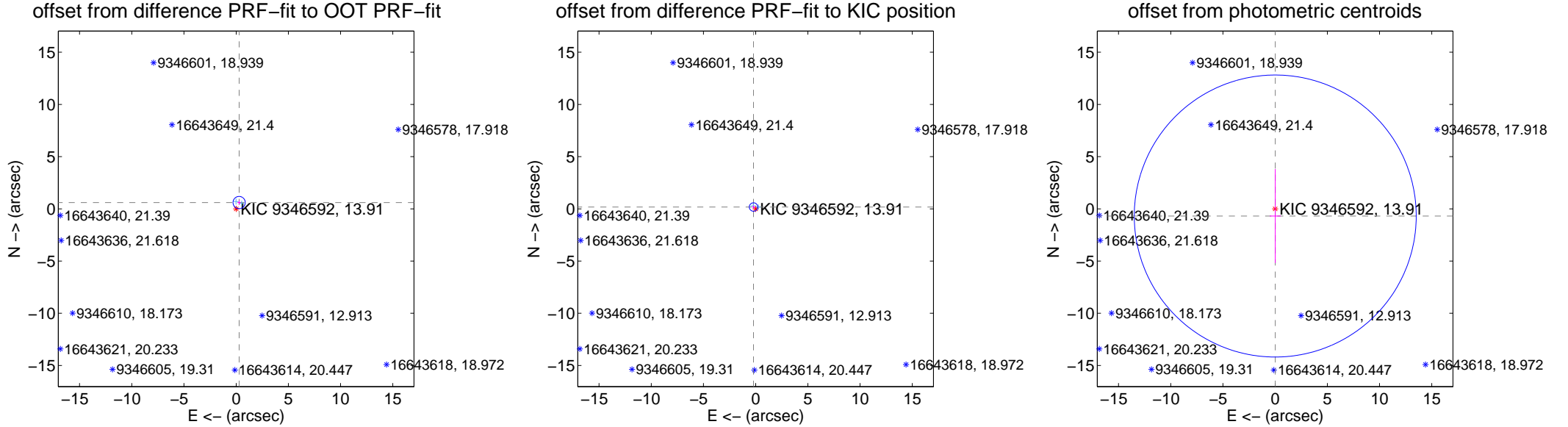
DV Centroid Data

Supplemental centroid analysis for 009346592-07. Kepler magnitude: 13.91. Transit SNR 7.34

There are 3 quarters with good PRF difference image offsets

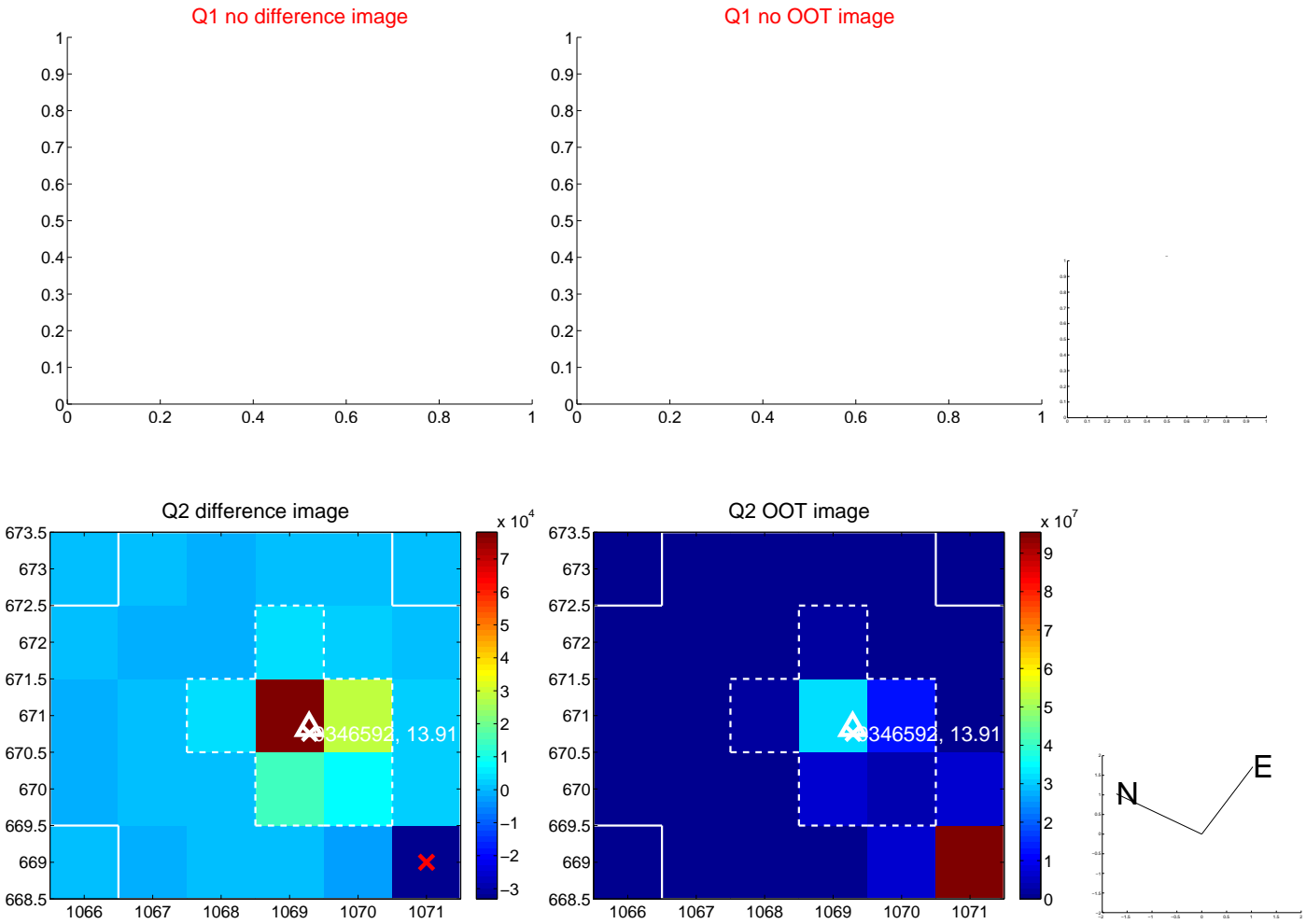
The direct PRF centroid is offset from the target star catalog position by about 0.45 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.668 \pm 0.195	3.42	-0.284 \pm 0.175	0.604 \pm 0.199
PRF-fit source offset from KIC position	0.269 \pm 0.135	1.99	0.204 \pm 0.128	0.175 \pm 0.143
photometric centroid source offset	0.69 \pm 4.50	0.15	-0.01 \pm 0.52	-0.69 \pm 4.50

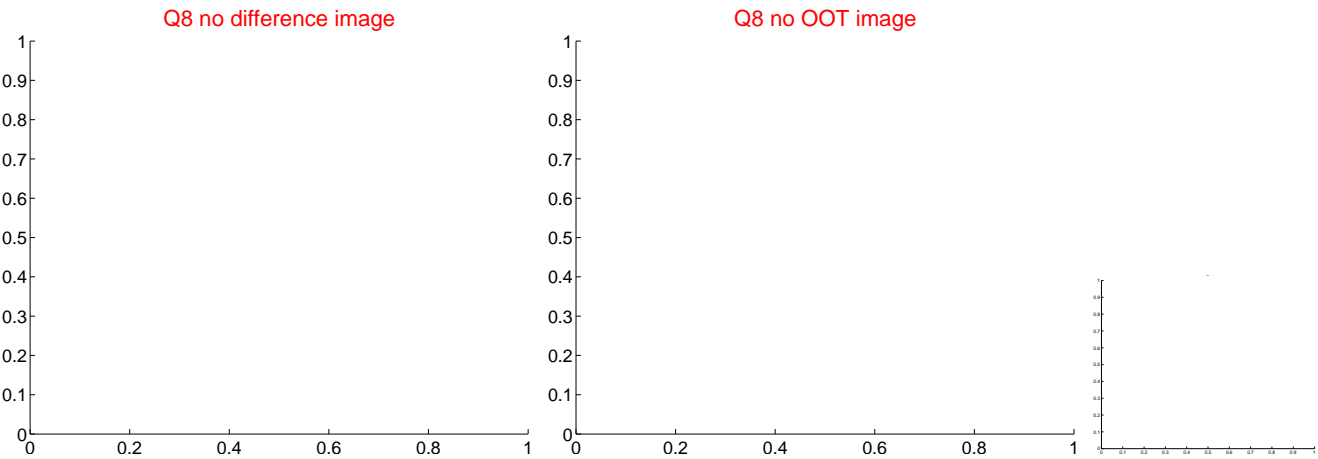
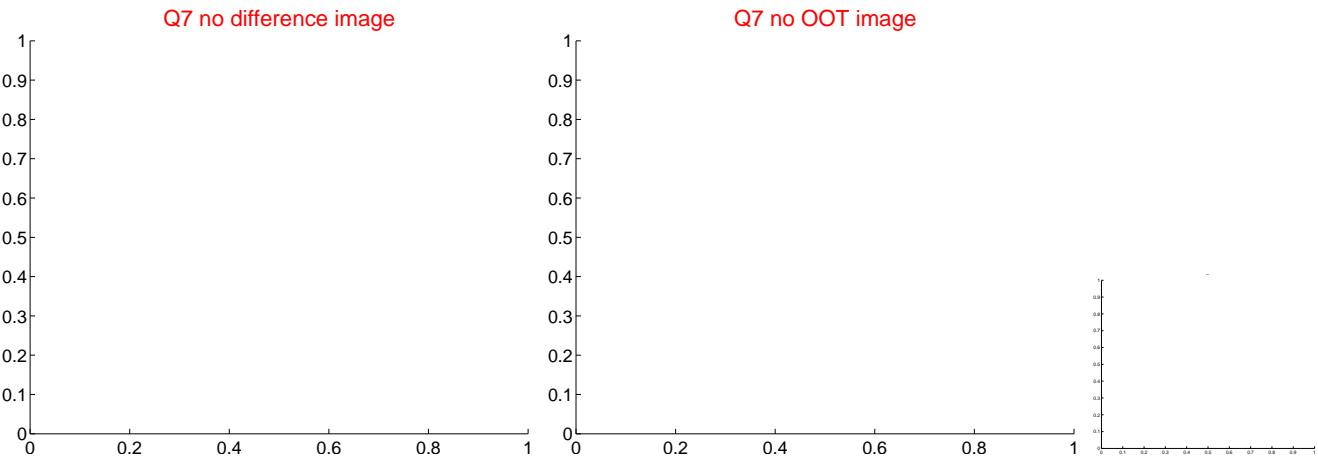
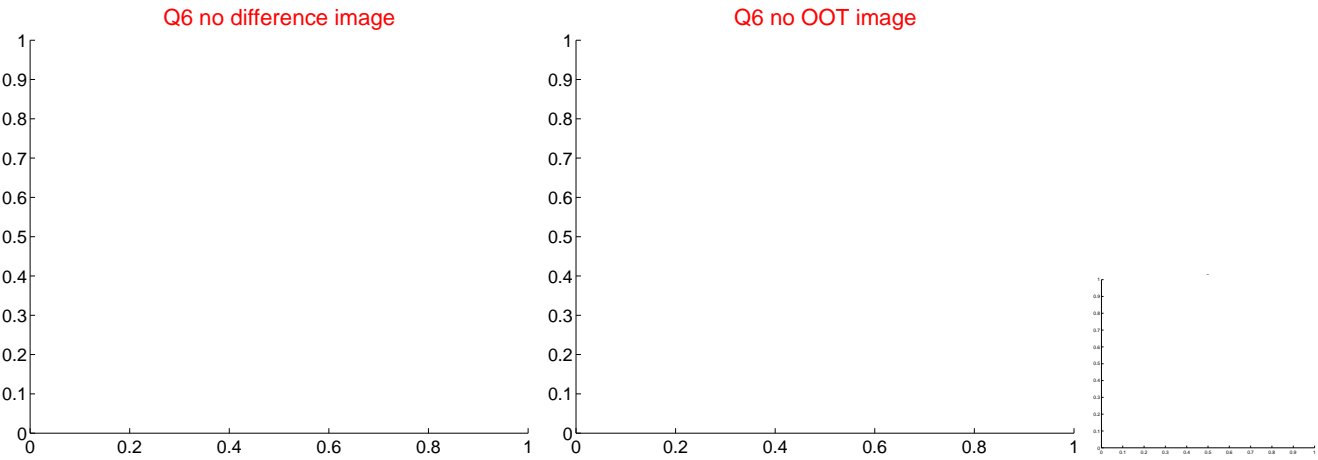
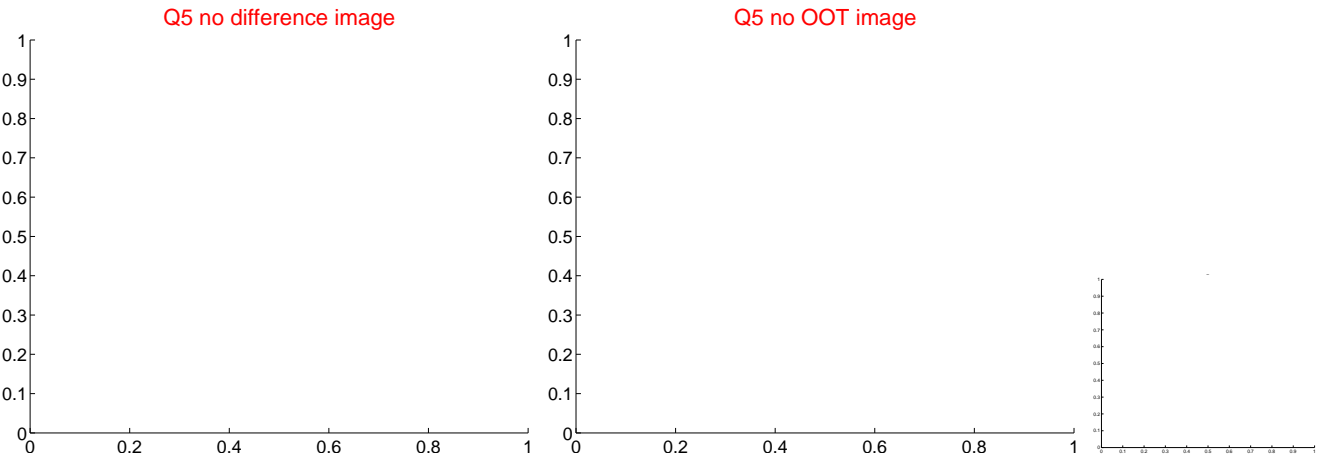


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000 are from the UKIRT catalog.

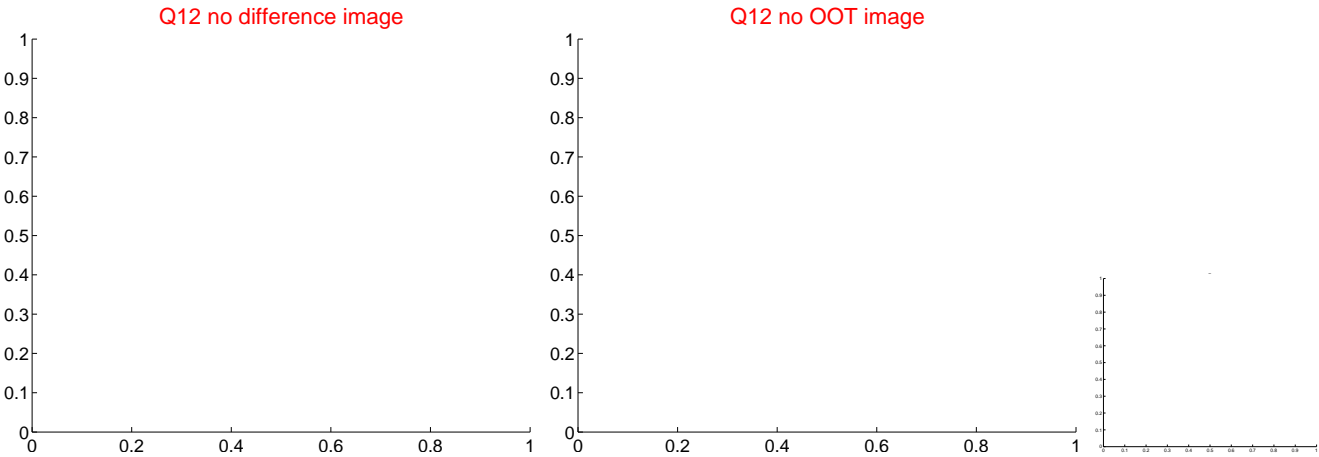
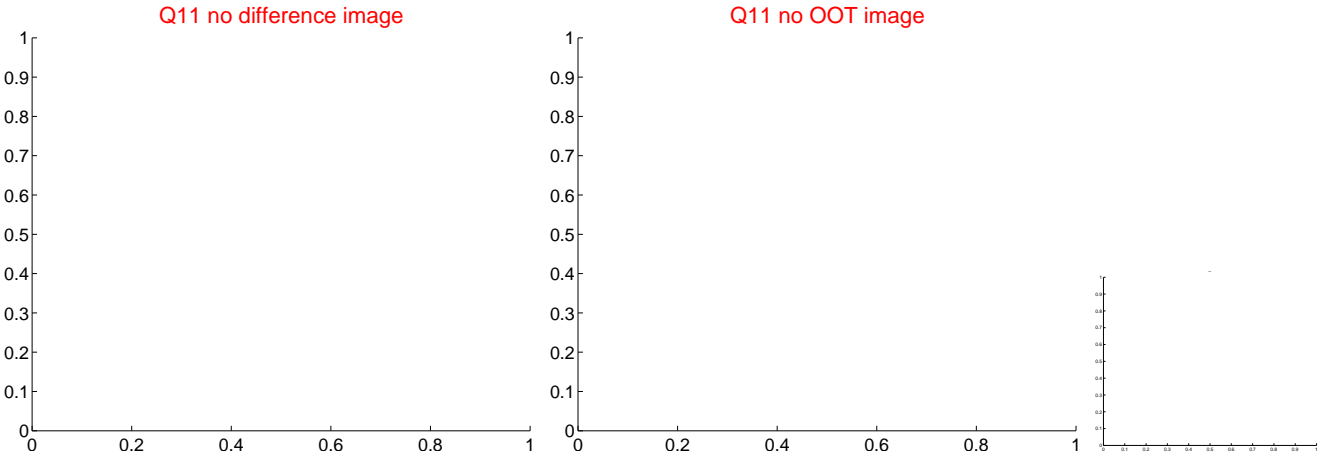
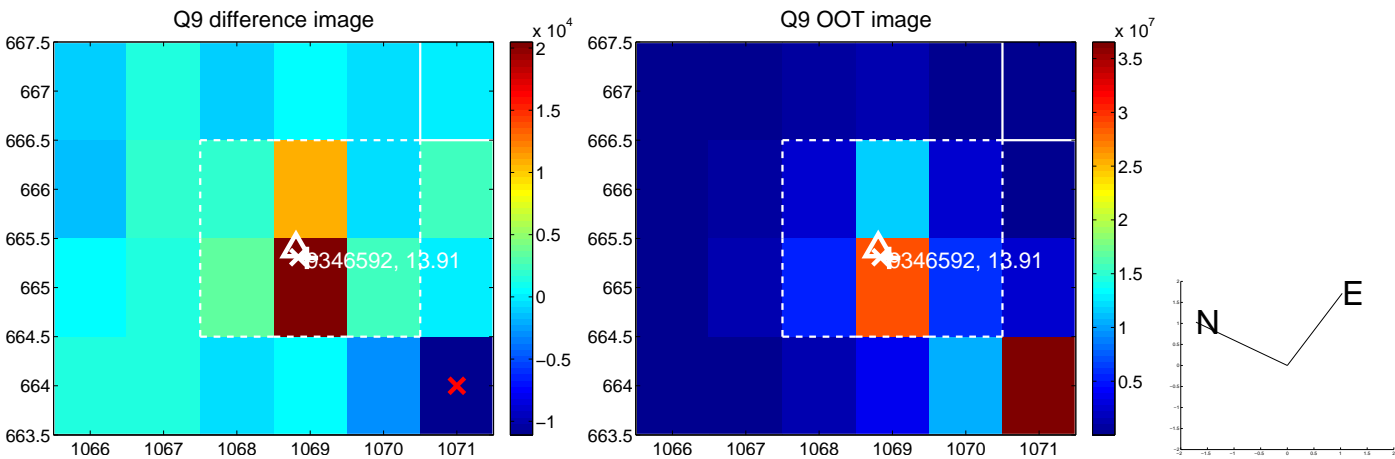
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



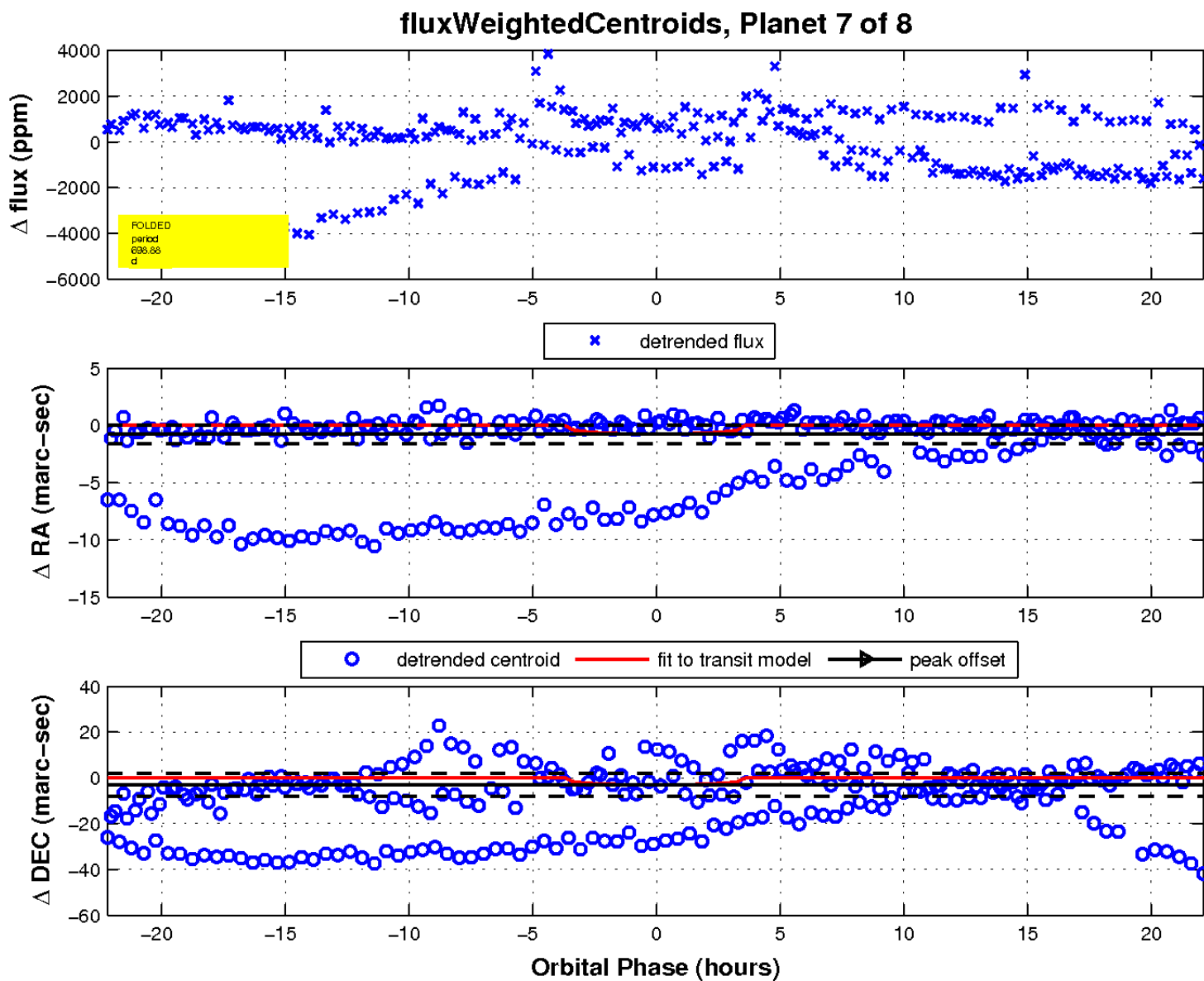
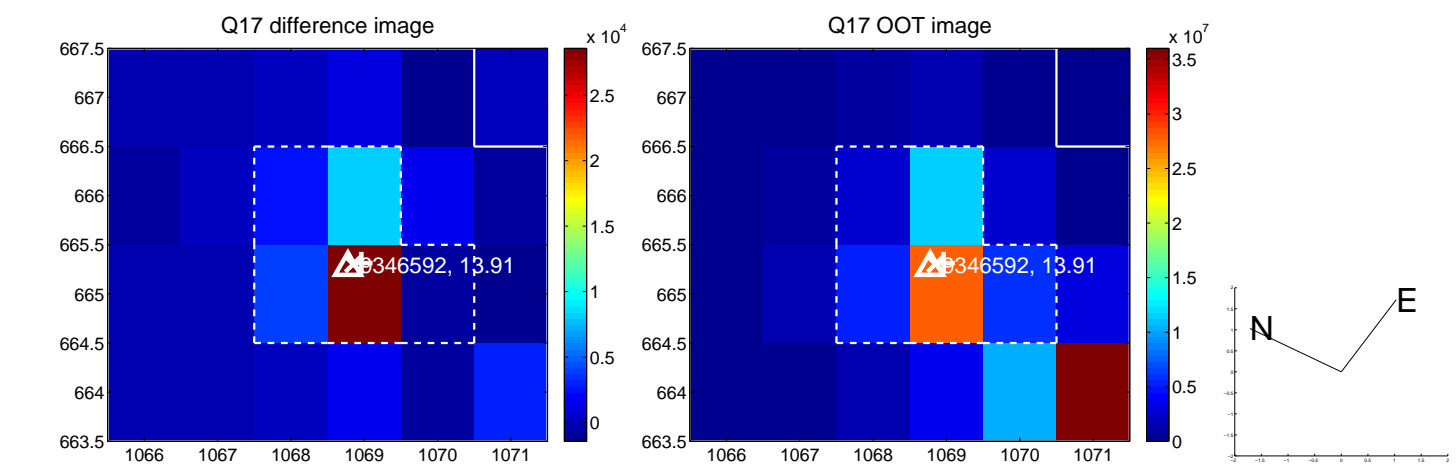
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

